Industrial

Standardization

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Readers Write

Lighting for School Machine Shops

Department of Industrial Arts and Trades and Industry

Indiana State Teachers College

Gentlemen: At least 100 school corporations in the State of Indiana, planning to build new Industrial Arts Shops or remodel present shops as soon as materials are available, come to us seeking information about lighting. Do you have available technical information resulting from study and research on the subject of lighting (meaning artificial lights, of course) for school shops or information relating to the amount of light that should be provided for different machines, ordinarily found in school shops. I should also like to have information about lighting standards for drafting rooms, as well as shops.

SYLVAN A. YAGER
Chairman

• • The American Recommended Practice of School Lighting, A23-1938, has been revised and is before the Board of Review for final approval, but the American Recommended Practice of Industrial Lighting, A11-1942, includes recommendations for industrial lighting with regard to machine shops.

Suggestions For Safe Ladders

San Francisco, California

Gentlemen: Will you please tell me how I may obtain a copy of the American Standard Safety Code for Construction, Care and Use of Ladders, A14-1935.

Can you tell me where I may get some information on the construction of the kinds of towers used in the construction and maintenance of trolley systems. I would like to get all the information possible on the tests for safety on these towers and trucks.

I am a trolley lineman and particularly interested in getting the towers and ladders used in the work built and maintained so that my fellow workers and I will have safer working conditions on the job. At present some of the conditions and equipment are homemade, makeshift, and extremely hazardous.

CHARLES N. EDMONSTON

• • The testing of wood has been discussed in meetings on revisions of the ladder code, the 1948 edition of which has just been published. Some believe that it is possible to apply a test load to a ladder while it is lying horizontal near the ground. It was reported by experts that any test severe enough to prove anything could easily damage

Company Members

More than 2100 companies hold membership either directly or by group arrangement through their respective trade associations

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ASA
Reg. U. S. Pat. Off.

Ruth E. Mason, Editor Janet Meldon, Assistant Editor

Standardization is dynamic, not static. It means not to stand still, but to move forward together.

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the ladder so that the next time it was used it might fail because of the strains which had been put on it during the tests. As far as the wood is concerned, therefore, it is essential to take the engineering data concerning the strength of the wood and then from the dimensions of the actual piece to compute the safe load, rather than to apply a test load. The safety of the ladder after it has been used can sometimes be determined by inspection, to see whether parts have been worn or split, or have been subjected to decay or other damage.

The ASA does not at present have any specifications for towers used in the maintenance of trolley systems, nor does it know of any other organization which might have any standards on this subject.

Dimensions of Reamed Holes Not Governed by Standards

Argus, Inc
Ann Arbor, Michigan

Gentlemen: We are compiling engineering standards for use by our designers and draftsmen and would appreciate any information you can give us on standards for counter-bores and counter-sinks, as well as standards for the holes produced by standard twist drills, reamers, and counter-bores.

MAURICE K. CARR
Product Engineer

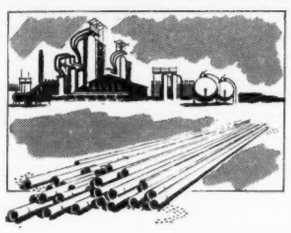
• • No American Standards for counter-bores and counter-sinks have as yet been established, nor are such standards under consideration at the present time.

No standards have been set up for holes produced by American Standard twist drills or reamers. In fact, there seems to be general agreement that the limiting dimensions of a reamed hole should not be tied up with the specification of any particular reamer size (or limiting dimensions for the reamer size). The reason for this is that, depending on the conditions under which a reamer is used (material of the workpiece, lubricant used, etc), a reamer may cut a hole ranging from one that is larger than the reamer size, to one that is smaller. Therefore, it has become accepted practice in American Standards to specify limits of size for the work, without specifying the limits of the tool. Of course, in the practice of making a particular product, by specific methods, an industrial manufacturing concern may decide to work up its own specifications in this regard.

Our Front Cover

Industry applies standardization techniques in many varied forms. In the elevator industry, for example, construction and performance standards regulate mechanism, proper installation, and meticulous inspection in order to insure safe operation. Photo courtesy of A. Devaney, Inc, N. Y.

We refined the idea for refineries . . .



THIS little trick helps Rosalind determine in advance how materials will react to heat. It's practical and simple . . . but quite inaccurate. Foreseeing the behavior of alloy steel tubes in the metal-torturing temperatures of modern refineries and other chemical processes calls for much more complicated and exacting tests, but time was when *guesstimates* applied there, too.

Today, the performance, endurance, and safety of seamless and welded tubing can be closely predetermined. And in the refinement of laboratory methods for thus purpose, B&W has long been a leader.

One B&W step was the development of a small testing unit (it could fit on Rosalind's ironing board) that would pre-check tube steels for changes in hardness and structure under heat. This "gradient bar test" and others devised by B&W to determine reactions to corrosion and pressures, have enabled B&W to develop tube analyses for every type of high-pressure, high temperature service — and to match tubes to specific jobs with prescription precision.

Such refinement of testing methods is typical of B&W research. Old in experience, B&W has pioneered many such advances in many fields. Yet B&W is still young enough to have new ideas . . . ideas for engineers of *all* industries, in connection with present problems or future plans.

N-17

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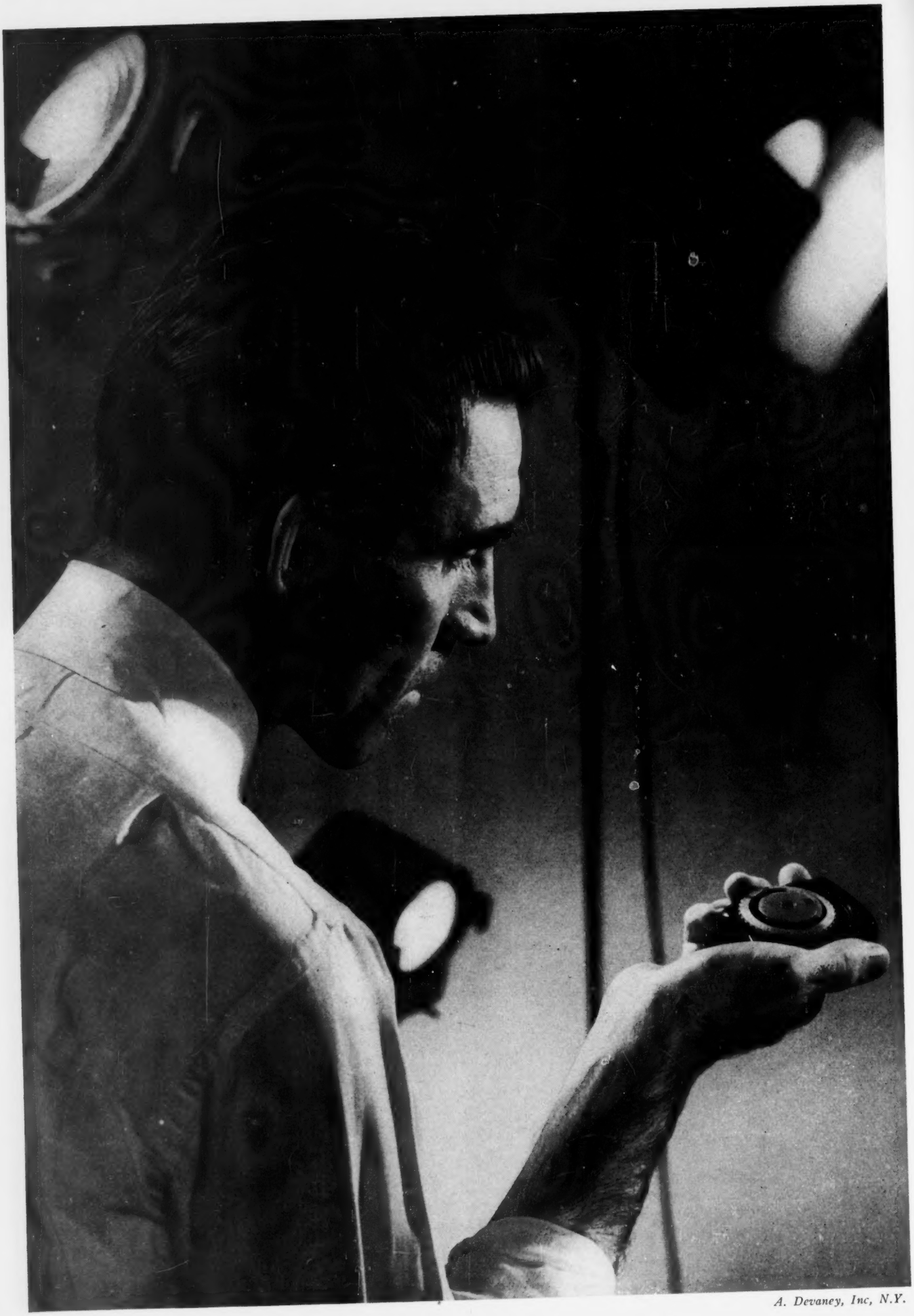


A. Devaney, Inc, N.Y.

For Better Photography

By Allen Stimson

Photometric Instrument Division
General Electric Company

TO give consumers the advantages of uniform markings, standard calibration, uniform exposure index numbers, and minimum requirements for accuracy and performance is the primary purpose of the new American Standard for General Purpose Photographic Exposure Meters (Photoelectric Type), Z38.2.6-1948. Manufacturers should also find the standard a valuable guide in designing and testing their products, for it defines many performance requirements which heretofore have been somewhat indefinite.

Fundamentally, the determination of exposure requires a measurement of two quantities not dependent upon the camera design—the film sensitivity and scene brightness. From these two measurements, photographic camera exposure may be calculated by the customary formula given on page 136.

Prior to the war, there was considerable difference in the methods used by manufacturers in testing sensitive materials and expressing the film speed. Standardization of this quantity was achieved by the American Standard Method for Determining Photographic Speed and Exposure Index, Z38.2.1-1947, which not only defines a reproducible and uniform method of determining the film speed, but expresses it in terms of the minimum practical exposure which would render a good print. This standard further assigns a uniform series of exposure index numbers which have been universally accepted.

After standardizing the method of arriving at the value of exposure index numbers, the complete rationalization of photographic exposure still required a standard method for calibrating exposure meters. A new standard has done this. Now the actual film exposure in the focal plane is mathematically related to the minimum useful film exposure in terms of measurement of the scene.

One of the features of the standard is the fact that it prescribes certain minimum requirements in regard to readability. The instrument scale divisions are not to be less than 0.025 inch, the zero adjustment range is to be at least 2 percent of the scale length, and the change in indication due to its position is also to be less than 2 percent of the calibrated scale lengths.

The standard requires the numerals shown on the computer dial for both relative aperture markings and shutter speeds to include the series of preferred numbers stipulated by the American Standard for Lens Aperture Markings, Z38.4.7-1943. The film Exposure Index markings are to be in accordance with the American Standard Method for Determining Photographic Speed and Exposure Index, Z38.2.1-1947. The preferred values of these three variables are to be shown on the dial, and the intermediate cube-root-of-two steps between these adjacent primary markings are to be clearly indicated, and may be marked. The inherent error in operating and marking the computer dial is prescribed to be less than a sixth of an *f*-stop.

If the instrument is exposed to extreme temperatures of —31 F and

The ASA Committee on Standardization in the Field of Photography was initiated in September 1938, on the recommendation of a general conference of the American photographic industry following a request from the International Standards Association that the ASA accept the Secretariat for ISA Committee 42 on Photography. The Optical Society of America was designated as sponsor for the ASA project.

In February 1946 a subcommittee undertook work on the development of a proposed standard for photographic exposure meters. Members of the committee were:

M. E. Russell, Eastman Kodak Company, *chairman*
M. G. Anderson, Ansco Company; Ira B. Current (alternate)
John M. Centa, Photo Products Department, E. I. du Pont de Nemours & Company, Inc
Walter Clark, Research Laboratories, Eastman Kodak Company
Raymond Davis, National Bureau of Standards
John Dessauer, Haloid Company; Eugene C. Fuerst (alternate)
R. E. Farnham, General Electric Company
Robert M. Jackson, Photographic Branch, Squier Signal Laboratory; Allen M. Rahm (alternate)
C. N. Nelson, Research Laboratories, Eastman Kodak Company
Brian O'Brien, Institute of Optics, University of Rochester
A. G. Stimson, General Electric Company
E. D. Tillyer, American Optical Company
J. P. Weiss, Photo Products Department, E. I. duPont de Nemours & Company, Inc; D. R. White (alternate)
A. T. Williams, Weston Electrical Instrument Corporation
L. E. Howlett, Optics Section, National Research Council, Canada—Liaison

Copies of the standard are available at fifty cents each.

+131 F, the maximum permanent change in indication at 77 F cannot exceed one third of an *f*-stop.

The actual change in instrument indication due to a change of plus or minus 36 F from the normal temperature shall also not exceed a third of an *f*-stop. During these tests, readings are to be taken at approximately mid-scale.

Calibration Formula for Reflected-Light-Type Meters

For reflected-light-type photoelectric exposure meters, the following calibration formula taken from American War Standard for Photographic Exposure Meters, Z52.12-1944, which was identical with JAN-M-58, is retained.[1]

$$T = \frac{KA^2}{BS}$$

where

T = exposure time in seconds
A = relative aperture or *f*-number
B = brightness of uniform surface source expressed in candles per square foot
S = film Exposure Index (Z38.2.1 and Z38.2.2)
K = a constant whose value shall be marked on a nameplate of the exposure meter or given in the instruction manual furnished by the manufacturer. The value of this constant shall be between 1 and 1.35 inclusive

A formula of this type has been used for photoelectric exposure meters since the beginning of the art. Deviation between manufacturers has been in the value of K. The war standard stipulated the value of K to be 1.25. The value used with a given meter depends somewhat upon its acceptance, and upon the method of operation prescribed by the manufacturer. For this reason, a range of values between $K = 1$ and $K = 1.35$ has been allowed so that the manufacturer may choose the value for his meter which results in optimum exposure for the most critical film under average conditions.

The standard further requires that the initial calibration accuracy of the exposure meter shall be within one-third *f*-stop within the angular center half of the scale and shall be within one-half *f*-stop at other points on the scale. If two scales are used, the multiplying means shall not introduce an additional error exceeding a sixth of a stop.

[1] The new standard differs from the war standard in its wider scope and consideration of civilian needs.

The accuracy of the exposure meter is measured as the deviation of the value of K, obtained in photometric tests, from the value which the manufacturer claims. A uniform method of testing meters is prescribed, and a means of setting up the photometric brightness standard is suggested.

In percent of actual value of the point being calibrated, the *f*-stop equivalents are:

f-stop	Max		Min
± 1/6	+ 12 percent	and	—11 percent
± 1/3	+ 26 percent	and	—21 percent
± 1/2	+ 41 percent	and	—29 percent

The angle of view of a reflected-light-type exposure meter is defined in terms of its acceptance. This definition is similar to that in JAN-M-58 except that a minimum value of 0.60 was prescribed. In this civilian standard, the means of measuring acceptance is stipulated, and classes of acceptance are defined but minimum values are not required. These classes are as follows:

Class	Acceptance Min	Acceptance Max
A	0.6	1.00
B	0.4	0.59
C	0.25	0.39

The war standard was limited to reflected-light-type exposure meters. The civilian standard also includes incident-light exposure meters for which the following calibration formula is given.

$$T = \frac{CA^2}{IS}$$

where

T = exposure time in seconds
A = relative aperture or *f*-number
C = constant whose value shall be marked on the nameplate of the exposure meter or given in the instruction manual furnished by the manufacturer. The value of this constant shall be between 15 and 30
I = illumination incident on the exposure meter expressed in footcandles
S = film Exposure Index (Z38.2.1 and Z38.2.2)

The value of the constant C depends on the manner in which the exposure meter is used to measure incident light. If the meter is pointed from the subject position towards the camera, the lower value gives the right exposure, whereas if the meter is pointed from the subject towards the light source, the higher value gives better exposure. Furthermore, determination of exposure by incident light seems to require a higher value of C for bright-sun illumination than for tungsten illumination, apparently because of color temperature and intensity.

The same accuracy limits are stipulated as for reflected-light meters and means for calibrating the meter using a standard concentrated light source are prescribed.

Performance Limits of New Exposure Meter Standard Compared with Similar Figures from the War Standard

Description of Test	Test Limit Z38.2.6-1948	Test Limit Z52.12-1944*
Initial accuracy	± 1/3 *f*-stop	± 1/3 *f*-stop
Max computer error	± 1/6 *f*-stop	± 1/6 *f*-stop
Max multiplier error	± 1/6 *f*-stop	——
Calibration Constants		
Reflected light	$K = 1.00$ Min $K = 1.35$ Max	$K = 1.25$
Incident light	$C = 15$ Min $C = 30$ Max	
Acceptance—minimum	Class A 0.6 Class B 0.4 Class C 0.25	0.60 Min
Temperature Influence (± 20 C)	± 1/3 *f*-stop	± 1/3 *f*-stop
Permanent change due to extreme temperatures	± 1/3 *f*-stop	± 1/3 *f*-stop
Balance error (percent of scale length)	2 percent	2 percent

* Test conditions for the war standard were somewhat more severe than those in the new standard, and some additional tests for sturdiness under service conditions were required.

The new exposure meter standard, in conjunction with the existing Exposure Index standard, gives the consumer assurance of far greater accuracy in exposure determination than has been possible heretofore. It enables the user of one type of exposure meter to use another make with maximum certainty that he will be able to read computer calibrations.

The standard in no way puts a limit on the quality which the manufacturer can build into his exposure meter, but gives the maximum leeway in improving and further simplifying his design while, at the same time, assuring the customer of a high minimum quality in the product, compatible with its intended use and purpose. The values of aperature and shutter time to be marked on the computor dials have now been standardized giving the exposure-meter manufacturer a uniform method for testing his and competitive products for the purpose of quality control.

As for the manufacture of photographic film, he now has greater assurance that his product will be exposed as intended and that his customers will thereby receive increased satisfaction from the use of his films.

Other Recent Photographic Standards

The committee on standardization in the field of photography, in keeping with its overall program, has recently completed several other American Standards. They include:

• • a standard defining the dimensions of 35-mm magazine film for miniature cameras, American Standard Dimensions for 35-Millimeter Magazine Film (for Miniature Cameras), Z38.1.49-1948. Such films were, in the past, widely used for "candid camera" photography, but, today, are largely used for making color film slides for home projection and color prints. The principal purpose is to assure that enough film will be provided in each loaded magazine to produce the number of exposures advertised, and that the film can be used in any 35-mm miniature camera. The standard provides maximum and minimum dimensions for the overall length of the film (which includes the leader length, the trailer length, and the space needed for the required number of pictures), the length and width of the tongue, the length of the trailer, and the length of the leader. The width of the film and the dimensions of the perforations are the same as those for 35-mm motion picture film as provided in either the American Standard for Cutting and Perforating Negative Raw Stock for 35-Mm Motion Picture Film, Z22.34-1944, or the American Standard for Cutting and Perforating Dimensions for 35-Mm Motion Picture Positive Raw Stock, Z22.36-1947. One of the important provisions of the new standard is the requirement that in shaping the ends of the film for threading into the camera and for anchoring to the magazine core none of the perforation holes shall be pierced.

Eastman Kodak Company

Better film processing is assured through new test methods

• • a test method for determining approximately the maximum safe processing temperature for a given photographic material, American Standard Method for Determining Maximum Safe Temperatures for Photographic Processing Solutions, Z38.8.19-1948.

• • a standard covering thermometers of a grade suitable for use in the measurement of photographic solution temperatures with an accuracy suitable for photographic processing, American Standard for Photographic Grade Thermometers, Z38.8.11-1948. The standard recognizes both fluid and bimetallic types of thermometers.

• • a revision of the American Standard Methods of Testing Printing and Projection Equipment, Z38.7.5-1943. The 1948 edition is almost identical with the former standard; only two changes have been made, and these are of an editorial nature in order to clarify the meaning of the standard.

Hayes Named Safety Director of Atomic Energy Commission

Daniel F. Hayes, member of the staff of the American Standards Association since October 1943, left the Association in September to assume the duties of Safety Director of the U.S. Atomic Energy Commission.

During his five years with the ASA, Mr Hayes was responsible for safety code work in the fields of personal equipment, exhaust ventilation, refrigeration, industrial x-rays, and highway traffic. He was also secretary of the Board of Examination, handling the many miscellaneous projects under the Board's jurisdiction.

Prior to coming to the ASA, Mr Hayes gained industrial accident prevention experience as supervisor of safety and health in various plants of the Sperry Gyroscope Company, and as Safety Engineer with the Travelers Insurance Company. In the latter company, he received his initial safety work in all lines of casualty insurance and accident investigation and elimination.

Mr Hayes has a degree in Mechanical Engineering from Rensselaer Polytechnic Institute and in Law from Brooklyn Law School. He has been an active member and officer of the Metropolitan Chapter of the American Society of Safety Engineers for the past 12 years and is a member of the American Industrial Hygiene Association.

During the war he was a volunteer agent for the National Committee for the Conservation of Manpower in War Industries and taught accident prevention courses at New York University.

Standardization—

By W. J. Kunz

Ally of Industry

Mr Kunz, manager of drafting of the Combustion Engineering Company, Inc, is also chairman of two subcommittees of the ASA Sectional Committee on Graphical Symbols and Abbreviations for Use on Drawings, Z32. These subcommittees deal with mechanical graphical symbols and abbreviations. The material used in this article constituted part of a speech presented by Mr Kunz before the New York Chapter of the American Society of Sanitary Engineers earlier in the year.

SOME thirty-odd years ago, when I was employed by one of the large elevator manufacturers, it was given to me, in the course of my duties, to fulfill a request for a repair part of an elevator that had been installed in a Baltimore building many years before. This particular part was an internal spur tooth gear. I instituted a search throughout the old records of the company in an endeavor to determine what materials had actually been furnished, and the nature of the machine work that was necessary to turn out this gear, but without avail—these records could not be found. It was necessary, therefore, that some rub prints be made of the existing gear, that some full-scale photographs be taken, and that a record be made of the necessary dimensions so that we could duplicate what was furnished on the original installation. It was only possible to make such duplication by furnishing the pinion in addition to the gear to assure the proper functioning of this machine. Some months later, in delving through some old records, I was rewarded by finding

A. Devaney, Inc, N.Y.

During the war, thanks to interchangeable parts, maintenance and repair of boiler equipment could be carried on in any Allied shipyards around the world.

"If, in the years to come, it is given to someone to write a comprehensive treatise on standardization, its origin, its beneficial effects on mankind, and its broadness in governing the ways of life, I believe the opening chapter of that book would give full credit to Genesis, the first and second chapters, because I do not know of any standardization that has taken place so far, in whatever form, that would be comparable to the standardization that governed the creation of heaven and earth and of man and the very essence of life itself. Whether we consider man of the primitive age or the present day native of the jungle or from the standpoint of what we consider modern civilization, the fact remains that man has been granted along standardized lines, color, texture, quality, and strength, two eyes, two ears, one nose, one mouth, and all of the other essential parts of the human anatomy. Standardization not only follows the material substances of the body, but, likewise, covers the functional activities, breathing, blood circulation, the senses of smell, touch, taste, the activities of muscular action of flexes and reflexes. It would seem to me that throughout all industrialization, including manufacture, construction, distribution, etc, a fair comparison could be made that whatever has been done has been, in some form or other, the emulation of the human body and its functions."

—W. J. Kunz

a so-called contract envelope that pertained to this installation. Imagine my amazement when, in opening this envelope, I found no reference to drawings, no material lists, but just a note in longhand. It was addressed to "Harry" and said, "Let's go ahead and build this machine as it was discussed this morning" and it was signed "Fred."

Compare this incident with the present-day methods followed in elevator production to serve manifold purposes, to carry heavy loads and light loads, to extend elevator service to buildings reaching into the clouds, all following a uniform pattern made to consistent jigs and fixtures for each of the individual types and classes and for their respective services.

Standard Railway Gage A Blessing to All

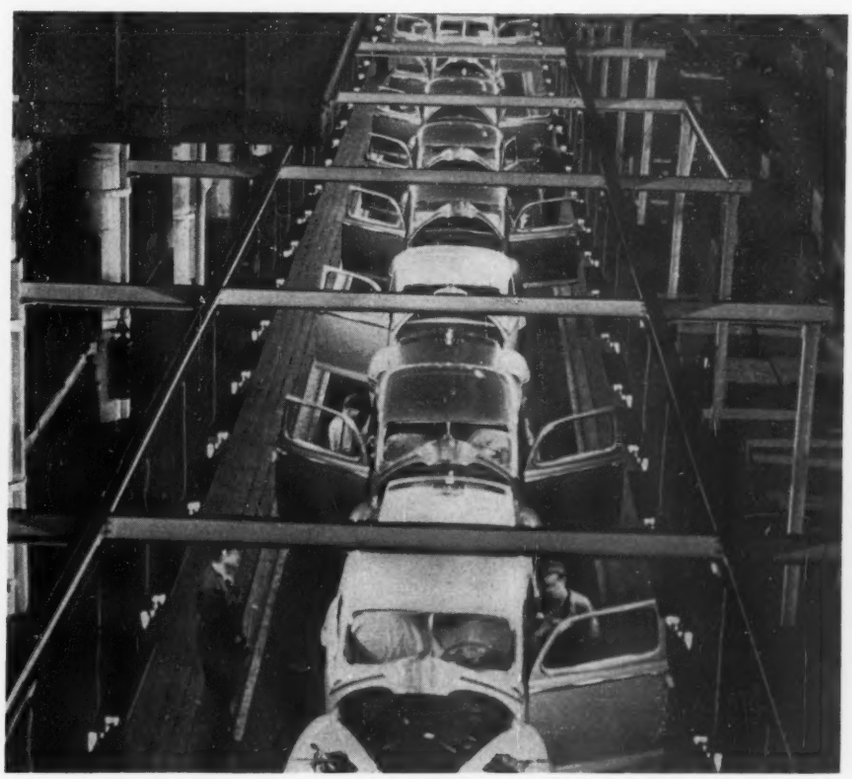
This one instance can be repeated thousands of times in as many companies and industries. Take, for example, the tracks used by our railroads. If some one of our forefathers had not had foresight enough to establish a standard gage of rail, what a dilemma we would be in today with our thousands of miles of track throughout all of our states. Can you conceive of two different gages of track; one allocated to our New York State system and another to the surrounding states, the delays and handicaps that would be encountered due to the inability to run cars from one state to another? As a matter of fact, there exists today, I believe, one such road of narrow gage track in Mexico and all shipments consigned over that road must of necessity be unloaded from the American cars at the borderline and reloaded onto the Mexican railroad cars.

One of the outstanding examples of standardization is in the automobile industry with the mass production methods that are followed and the necessary interchange of parts that are required. How far would this industry have gotten if it had not standardized within the different makes of cars as well as within the different styles and models and their component parts? Your car needs attention, you take it to a service station and the mechanic tells you that you require new piston rings, some new bearings, or other miscellaneous parts. It does not occur to you for one moment that these parts cannot be readily obtained and the job not properly done. This is directly due to standardization not only in the design and manufacturing function that entered into the concept of this automobile, but also by the establishment of jigs and fixtures and their standardization from the standpoint of uniformity, tolerances, and allowances. These make it possible that regardless of where your car is to be repaired, whether it is in New York State or California, whether it is in Canada or Mexico, you have the definite assurance that parts can be obtained and that when they are installed they will fit.

An interesting example of recent development as far as standardization goes is reflected in the necessity of our steam turbine manufacturers to design, fabricate, and install these machines in as short a time as possible in order to cope with the large demand for electricity. Right after the war, it was recognized that if each utility company and consulting engineer designed its new power plants or extensions along the lines of its individual ideas, each of the turbines required would be an entity in its own right and require new thoughts in design, new drawings, new patterns. All of this would add up to high costs, but, of even greater importance today, to long delays in delivery. To overcome this situation the turbine manufacturers established what they considered a conservative range in steam pressures, temperatures, speeds, etc, yet broad enough to cover most of the fields of requirement for these machines. This standardization has enabled turbine manufacturers to fabricate and install these machines in much less time than could otherwise have been done.

A good example of how standards can work was brought out during the last war in the boiler industry. Combustion Engineering Company, manufacturers of some of the largest steam generating units in the world, in conjunction with other boiler manufacturers, was assigned the task of equipping thousands of ships with boilers. This included ships of numerous descriptions aside from the Navy's heavy cruisers and battleships. A standard type and size of boiler was decided upon for each class of ship. This made it possible to issue the same drawings to all of the boiler manufacturers equipped to manufacture such equipment. These units were installed in ships built in yards on the Atlantic Coast as well as the Pacific Coast and even in some foreign ports. Yet it made no difference which manufacturer made the boilers or what ship they were going into, for they were all interchangeable, not only from a standpoint of installation and operation, but also from a standpoint of maintenance and repair parts.

One of the finest examples of stand-



A. Devaney, Inc, N.Y.

The automobile industry offers a fine example of standardization in action. Through mass production of uniform parts, both manufacturer and user benefit.

ardization work has been done by the ASME Boiler Code Committee. It was through the efforts of this committee that a comprehensive and recognized national code was established that governed not only the methods to be followed in designing the numerous items that go into a boiler or steam generating unit but also the materials and their metallurgical characteristics that are to be used. Without this code and the standardization that has taken place within the individual boiler companies and the industry as a whole, it would have been impossible to build the present-day steam generating units of a million pounds of steam or more per hour with pressures up to 2000 pounds and superheat temperatures of 1000 F and higher.

Uniformity Influences Efficiency of Food Industry

How about the food industry? The size of oranges is standardized in the various grades required for marketing. This establishes the size of an orange crate, or possibly the number of oranges, or the weight that will go into a given container. In liquid measure, milk containers and filling machines are standardized to guarantee that you get one full quart of milk and not an ounce more or less. Consider egg grading, which has been standardized so that it will run from 22 to 24 or possible 26 to 28 ounces per dozen, to assure the purchaser of an even run in size not only from a standpoint of usage in following cooking and baking recipes but also to enable the shipper to make use of a given size of carton and corrugated board to avoid undue breakage in handling. An oversize egg shipped in a standard crate soon becomes broken because it does not fit into its allotted space.

It is enlightening to read over the work that has been done by the oil companies; take Standard Oil, for instance, where in one area alone more than 500 different products are marketed under more than 20 separate brand names requiring utilization of only 28 basic container types and sizes instead of 46 containers before standardization.

Word Abbreviations For Use on Drawings

Standardization likewise follows other lines besides material things. Take, for instance, the abbreviations of words as used on drawings. During the war I was called on to head up as chairman, a committee composed of members of the joint Army and Navy Board, as well as industry, to establish a standard set of abbreviations that would have common usage throughout all drawing work and regardless of what specific type of design or function this drawing was to be used for. This work was done under the auspices and jurisdiction of the American Standards Association which as you know is a nationally recognized nonprofit organization for the sole purpose of instituting standards or cooperating with companies to further the standardization of products in their particular industries, both from a national as well as international approach.

For years the letters CRS were in common use and were the abbreviation for "Cold Rolled Steel." This was followed on all drawings, bills of material, part lists, and even on orders for such material. But time passes and new materials come into use so that in the last ten years some individual adopted this same abbreviation for "Corrosion Resistant Steel." There is a big difference between these two metals, not only in their metallurgical characteristics, but also in their price structure, and you would get a tremendous shock if one morning you arrived at your establishment to find out that an order for 10,000 shafts requiring cold rolled steel was actually furnished in corrosion resistant steel, considering that the one costs four to five cents a pound and the other costs from fifty to eighty cents a pound. That would have been a costly error and one that can be avoided by proper standardization so that today CRS still keeps its old identity but corrosion resistant steel is now known by its abbreviation of CRES, a newly coined word or abbreviation and, for short, pronounced "Cres Steel."

Standardization follows other lines also. Take symbols for instance. Graphical symbols as required for use on drawings save many man hours of time in the avoidance of having to draw the actual object. Line diagrams, particularly for piping, valves, and fittings, are distinctly under the headings of standards and standardization. A circle with a line through it or above it is ample identification for a given valve. Use of these symbols saves hundreds of man hours in drafting time in establishing drawings of piping layouts for steam, water, gas, and chemicals, to mention only a few.

Industry Still Needs Standards

There is much room for standardization throughout all industry. If tomorrow all standards were thrown into discard, life would become demoralized, traffic would come to a standstill, and, within a short period of time, the world would be set back a century or more.

UL Tests Described In Magazine Article

The work of Underwriters' Laboratories in striving to make its UL label a symbol of safety to millions of Americans is described in an article published in *Coronet*.

Entitled "The Label That Keeps Death Away," the article outlines some of the ways in which the use of a UL-tested product has dramatically saved lives and property.

Underwriters' Laboratories is a nonprofit research organization to which the fire insurance companies of the National Board of Fire Underwriters contributed the initial funds. Explaining that the testing service is purely voluntary, the article discloses that 3500 manufacturers pay the actual cost of giving their products a chance to win the UL label. In the past 54 years, more than 375,000 items have been tested and 500 million labels have been distributed. These labels, however, are a symbol of safety—not perfection, as *Coronet* points out. The products may lack other qualities which the laboratories do not attempt to pass on.

UL checking does not stop once a product has been tested. To make sure that the public really gets approved items, hundreds of inspectors are constantly on the job checking tested articles on the market and in the manufacturers' plants. This, and the risks that UL testers will take are the reasons why the label of Underwriters' Laboratories is recognized as a valuable safeguard, says *Coronet*.

Marble's Contribution To Industrial Standardization

By Romer Shawhan

Architects and engineers to benefit from new specification for the proper method of using and installing interior marble; first such national standard the building industry has had though the need has been evident for many years.

FOR many years the building industry has felt the need for a standard dealing with the proper methods of using and installing interior marble. This need has been evident not only to the architect specifying the use of marbles, but, also, to the marble industry itself. The recent approval of the new American Standard Specification for Interior Marble, A94.1-1948, should prove to be a boon to all concerned.

To fully appreciate the importance of this standard to architects, one must recognize the situation as it exists in the profession today. The individual now making a reputation for himself along architectural lines was a rather young man in 1929. How much he knew then about the commercially available marbles is questionable, and, from that time on, during the depression years, he was forced to use substitute materials. Generally, he was not in a position to specify marble for his designs.

To these depression years, when the use of marble was so greatly curtailed, five more years may be added due to the war, and another three for postwar reconversion. Only when faced with these facts can one fully realize what little chance these architects have had to "know their marbles" and the correct way to specify marble installations.

As an additional handicap, they have had no authoritative source to which they might go in order to obtain the correct information.

The Marble Institute of America (MIA), aware of this situation, realized that the development of a standard must be undertaken as quickly as possible to aid the industry. Accordingly, as soon after the end of the war as it was feasible, the Institute appointed a committee composed of F. J. Plimpton, chairman, represent-

Commerce Amor Bank, Nashville, Tenn — *Marr & Holman, Architects*

Through combination and contrast of the many varieties of marble available to the architect, he is able to attain interesting designs in his structures.

Mr Shawhan is Managing Director of the Marble Institute of America, the organization which was responsible for the development of this standard for interior marble. Now an American Standard—Specifications for Interior Marble, A94.1-1948—copies are available from the ASA at fifty cents each.

In keeping with the ASA's recent adoption of the policy of classifying American Standards in accordance with the Universal Decimal Classification system, this document will also be identified as UDC 691.2.

The Marble Institute of America is a new Associate Member of the American Standards Association.

The Institute, composed of quarriers, importers, wholesalers, finishers, and contractors of marble, was formed to establish and maintain the highest standards for the presentation of marble and the quality of workmanship related to its use. Having accumulated a fund of information from the domestic and foreign marble producing and finishing centers of the world, it is in a position to be of excellent service to those concerned with the problems of selection, supply, finishing, and installation of marble.

Present officers of the MIA are: George W. Oehmcke, Milwaukee Marble Company, *President;* Edward G. Pollak, Musto-Keenan Company, *Vice-President;* Carl V. Stafford, Tennessee Marble, Inc, *Secretary;* Chester A. Smith, Detroit Marble Company, *Treasurer.*

ing the Vermont Marble Company, B. A. Colonna, Colonna and Company, E. F. Miller, Miller-Druck Company, and J. F. Saunders, Gray Knox Marble Company, to study the problem. Organized early in 1948, the committee was assisted by Theodore I. Coe, technical secretary of the American Institute of Architects, and W. H. Deacy, Sr, staff architect of the American Standards Association, Incorporated.

Working with incredible speed, this committee came up with a draft for a guide and a standard in June of the same year. This draft was then referred to the membership of the Marble Institute of America, meeting in assembly, for approval. Some slight editorial changes were made but it was surprising to see how well-founded differences of opinion, based on local building practices in different parts of the country, had already been ironed out and settled by the committee in its various meetings.

Following approval by MIA, the specification was next submitted to the American Standards Association for adoption as American Standard. Some twelve or fifteen national institutes and organizations were asked for comment and criticism and from this group some valuable suggestions were received in reply. These were considered by the MIA committee and generally accepted. The regular procedure for adoption of a standard by the existing standards method was then followed and the finished result is American Standard Specifications for Interior Marble, A94.1-1948.

Architects and engineers will find this standard most valuable and useful because, by simple reference to A94.1-1948, they may incorporate into their specifications such important requirements as scope of work; conditions at the building; kind, surface finish, and location; samples; models; carving; interpretation of drawings and specifications; measurements; approval of shop drawings; divisions of work; setting materials; cutting and fitting; delivery and protection; cleaning; and guarantee—all to be found in the American Standard. This not only saves time and space in their own specification but also assures accuracy by eliminating vagueness and uncertainty.

Murphy Chapel, Cavalry Cemetery, Los Angeles, Cal; Ross Montgomery, Architect

Slabs of great size can be set by the new method of adhesion

Some interesting and progressive methods for setting marble are also to be found in the standard. For instance, the method of "construction by adhesion" has been thoroughly explained and standardized as an alternate method to the long accepted practice of setting by spotting with Plaster of Paris and the use of concealed setting wire anchors secured in the wall backing. This alternate method calls for plasticized synthetic resin bonding cement. This is a black or dark mastic material, impervious to moisture, not affected by heat or cold, which adheres with strong suction to all clean surfaces without sagging. It sets to a stiff plastic state—neither brittle nor hard—capable of absorbing moderate shock or settlement.

Damage to wall backing and expense of spoilage in drilling marble are eliminated by this method, since, normally, no anchors are necessary in setting vertical marble of two inches or under in thickness in this manner. This is especially desirable where setting space is tight or at points where anchoring is difficult.

It should be noted here that the committee took full cognizance of the progress that is being made in the dimensional coordination of building materials, commonly referred to as modular coordination. It was realized that, as marble has always been cut to predetermined sizes, the problem was not too difficult. Wherever specific recommendations for sizes and heights were stated, consideration was given to the determinations of Project A62.[1]

The MIA handbook, while not a part of the new standard, is a complete guide for the architect desiring to use marble. It includes some twenty or more finely drawn detail plates, which show toilet partitions, showers, wainscots, stairs, columns, etc. All of these details are in accordance with the contents of the standard specification. Because the MIA is in a position to give unbiased information regarding all foreign and domestic marbles, the guide incorporates the latest information regarding the commercially available marbles of the world.

When one realizes that there are so many marbles, so many possibilities of combination and contrast, such varied climatic and other influences that affect both color and structural values, and so many degrees of hardness and structural qualities among materials properly designated as marble, one can more fully appreciate what both the standard and the guide can mean.

The MIA is proud of the phrase, "This specification has been adopted as American Standard A94.1-1948," for it gives the architect or engineer confidence in the specification he is about to read. He realizes that the adoption of the specification as an American Standard has had the advantage of the thought, study, and critical analyses of many experienced technical minds in the ASA, in addition to the work of the committee.

[1] Project A62 is a sectional committee of the American Standards Association known more fully as the Committee on Coordination of Dimensions of Building Materials and Equipment.

Commercial Standards Recently Issued By the National Bureau of Standards

New Commercial Standards approved recently by the Commodity Standards Division of the National Bureau of Standards have been received by the ASA. Printed copies may be obtained from the Superintendent of Documents, Government Printing Office, Washington 25, D. C.

Fuel Oil, CS12-48—

This is a revision of the 1940 standard, developed by American Society for Testing Materials Committee D-2, and endorsed by the standing committee for the commercial standard. The purpose is to bring the standard into line with current refinery practice and burner construction. It covers five grades of fuel oil for various types of fuel oil burner equipment.

Copper Naphthenate Wood-Preservative, CS152-48—

The purpose of this commercial standard is to provide a nationally recognized specification for copper naphthenate wood-preservative for the guidance of buyers, sellers, and testing laboratories; to promote fair competition and consumer confidence in products conforming to the standard; and to provide a basis for labeling and guaranteeing the quality of the product. The standard covers physical and chemical characteristics and methods of tests of copper naphthenate products supplied in either concentrated or ready-to-use form.

Body Measurements for the Sizing of Apparel for Infants, Babies, Toddlers and Children (for the knit underwear industry), CS151-48—

To make available to producers, distributors, and users a nationally recognized system of sizing infants' to children's apparel—a height-weight system—for coordinating body measurements of the child with the ready-to-wear size designations, and for determining proper gradations between sizes of garment patterns and specifications, this commercial standard has been developed. It was first circulated by the National Bureau of Standards to producers, distributors, and consumers for written acceptance on September 10, 1945. Since that time, acceptances, representing over 65 percent of production volume of knit underwear within these size classifications, have been received. Printed copies will temporarily be held in abeyance until other segments of the apparel industry have had an opportunity to indicate the extent of their support.

Rayon Jacquard Velour, CS103-48—

Printed copies of the Second Edition of Rayon Jacquard Velour (With or Without Other Decorative Yarn) are now available. The original standard was developed in 1942 to provide a minimum quality of cotton and rayon velours used chiefly in the manufacture of upholstered furniture. It includes requirements for weight of finished fabric, weight and density of pile, construction of fabric back, colorfastness, and resistance to wear.

Chicago to Have All-Modular Plant

First all-modular plant to be constructed in Chicago is being erected for the Chicago and Northwestern Railroad Company, reports Structural Clay Products Institute.

All components, including brick and steel, are of modular dimensions. It is expected that one million new modular bricks will be delivered to this site and all of the glass blocks, steel, and other materials are to be on a modular basis.

Harry N. Latey

Harry N. Latey, one of the founders of the American Standards Association, died at his New York home on July 11. Mr Latey was a member of the original American Engineering Standards Committee when it was organized, and he was chairman of the subcommittee that drafted the original constitution which was adopted in 1918. For many years he had been Chief Electrical Engineer of the Board of Transportation.

Mr Latey began his career with the Westinghouse Electric and Manufacturing Company in 1893. He became the assistant engineer of the Manhattan Elevated Railway Company, in charge of the electrification of the city's old steam-powered elevated lines in 1898. When the Interborough Rapid Transit Company began plans for the first subway, Mr Latey became the electrical engineer of both the subway and the elevated systems.

After some time in private business, Mr Latey joined the State Transit Commission in 1920 as the electrical engineer in charge of the equipment division. He was also a consultant on the electrical equipment of the Hudson and Manhattan tubes and the Williamsburg bridge. When the Board of Transportation absorbed the Transit Commission in 1924, Mr Latey became chief engineer of the division of equipment and operation.

Will Test Nonflammable Hydraulic Fluids at Cornell

Evaluation tests on nonflammable hydraulic fluids for civil aircraft will be conducted by the Aeronautical Laboratory of Cornell University for the aircraft manufacturing industry, according to Oliver P. Echols, president of the Aircraft Industries Association.

The aircraft manufacturing industry, in designating the laboratory as its representative, climaxes an intensive cooperative program to stimulate the development of such fluids and thus contribute to a major improvement in flying safety.

Program Started by Aircraft Industry Association

This program started more than two years ago in a Research and Testing Subcommittee of the Aircraft Industry Association's Aircraft Technical Committee. The nation's airlines, represented through the Air Transport Association, have endorsed the test program at Cornell.

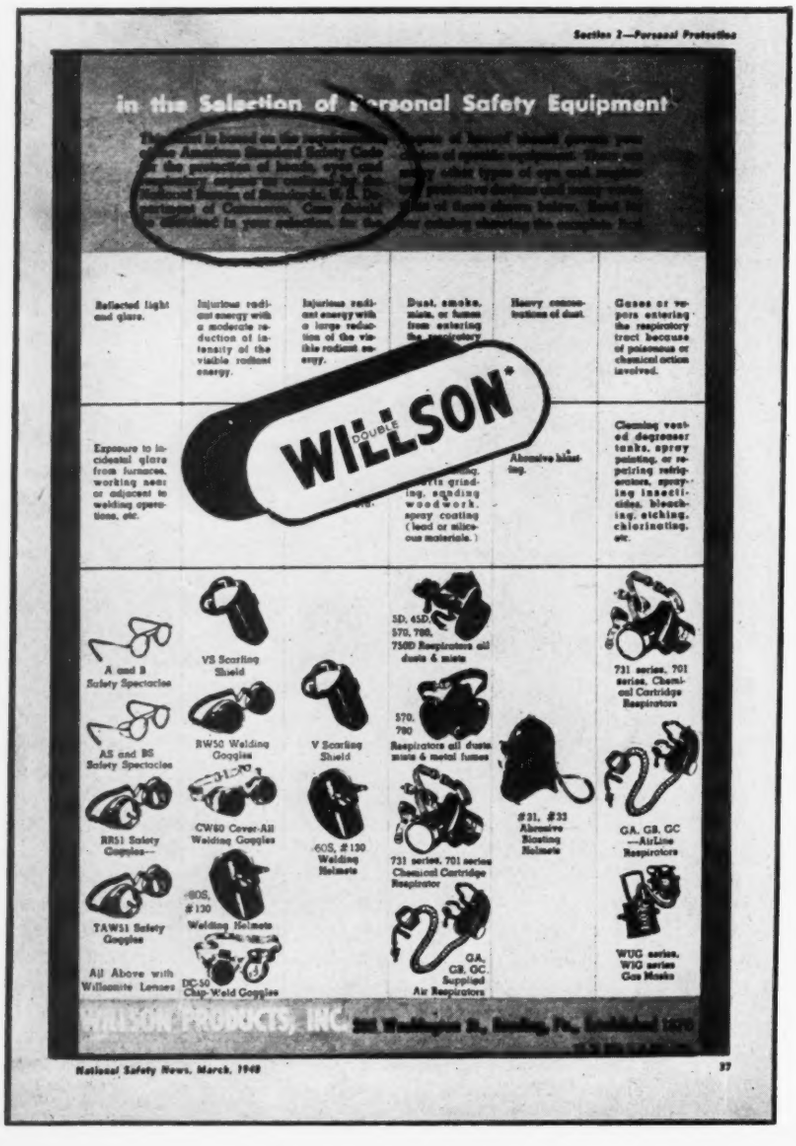
Acting in close cooperation with manufacturers of hydraulic fluids and with airline operators, the aircraft engineers have developed a new series of performance criteria for the proposed safety fluids. The standards will enable the industry to determine scientifically the characteristics of nonflammable type hydraulic fluids and their ability to meet the severe requirements of airline operation. The performance criteria to be used by Cornell in the new testing program have been published as Aeronautical Materials Specification 3150 by the Society of Automotive Engineers.

Petroleum Institute Adopts Service for Subscribers

To speed up the flow of information about new standards issued by the American Petroleum Institute, its Division of Production has introduced a new service for subscribers. In the future, as soon as they are ready, new specifications, supplements, editions, etc, will be sent to subscribers so that they will be able to use them immediately. The old practice consisted of one shipment a year, at which time all revisions, new specifications, and new editions, developed during that year were sent out together.

American Standards Help Sell Trade-Marked Products

Consumers in many different fields are becoming familiar with the guidance standards afford.


Section 2—Personal Protection
in the Selection of Personal Safety Equipment
Reflected light and glare.
Injurious radiant energy with a moderate reduction of intensity of the visible radiant energy.
Injurious radiant energy with a large reduction of the visible radiant energy.
Dust, smoke, mists, or fumes from entering the respiratory tract.
Heavy concentrations of dust.
Gases or vapors entering the respiratory tract because of poisonous or chemical action involved.
Exposure to incidental glare from furnaces, working near or adjacent to welding operations, etc.
DOUBLE WILLSON
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Cleaning vented degreaser tanks, spray painting, or repairing refrigerators, spraying insecticides, bleaching, etching, chlorinating, etc.
A and B Safety Spectacles
VS Scorling Shield
AS and BS Safety Spectacles
RW50 Welding Goggles
V Scorling Shield
CW60 Cover-All Welding Goggles
RR51 Safety Goggles—
60S, #130 Welding Helmets
TAW51 Safety Goggles
60S, #130 Welding Helmets
All Above with Willsonite Lenses
DC-50 Chip-Weld Goggles
5D, 65D, 570, 780, 7560 Respirators all dusts & mists
570, 780 Respirators all dusts mists & metal fumes
731 series, 701 series Chemical Cartridge Respirators
#31, #33 Abrasive Blasting Helmets
GA, GB, GC Supplied Air Respirators
731 series, 701 series. Chemical Cartridge Respirators
GA, GB, GC —AirLine Respirators
WUG series, WIG series Gas Masks
WILSON PRODUCTS, INC.
National Safety News, March, 1942
37

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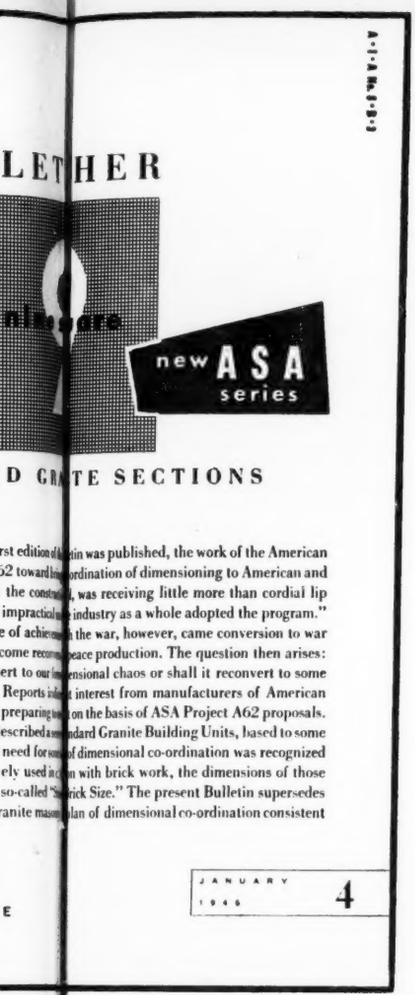
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preparing on the basis of ASA Project A62 proposals.
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JANUARY 1946 4

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The American Delegation Reports

By D. E. Douty

Chairman, United States Delegation

Success of the textile meetings at Buxton, England summed up; the coordination and unification of national standards for all kinds of fabricated textiles to be the subject of future meetings of the international technical committee on textiles.

AT its first session, the committee elected Sir William Larke, vice-president of the British Standards Institution, chairman for the meetings. It should be said here that these sessions were notable for the frankness with which the views were presented, and for the willingness on the part of delegates to take cognizance of the views expressed by others.

Secretariat. The United Kingdom and the United States, having each indicated a willingness to accept the secretariat of ISO/TC/38, the Council of the ISO had left the resolution of the question to the two nations concerned.

The United States and the United Kingdom agreed that the secretariat should remain with the British. Subsequently, in the course of a subcommittee of heads of delegations concerned with plans for the future work of the committee, a substantial part of the views of the American delegation was embodied in the program and its preamble.

Mr Douty is Chairman of the Board of the United States Testing Company, Inc. He was designated by the American Council of Commercial Laboratories, the National Federation of Textiles, Inc, and the New York Board of Trade to represent them at the textile meetings in Buxton, England. In addition, he was elected chairman of the group at a preliminary meeting prior to departure for England.

Definition of the Term "Rayon". The American view that the term "rayon" should not be used as the family term for all man-made fibers was ably presented by Dr Scroggie. Subsequently, with 13 countries present, 9 reported their view that there was a desire for a generic term for man-made fibers.

The subcommittee appointed made an attempt to arrive at a term which could be used as a generic term. Among others, the names "ison" and "ision" were suggested. The report embodied the suggestion that the advice of etymologists should be sought to ascertain whether a more suitable term with an appropriate root meaning might be put forward.

The committee voted to refer the matter to each country for consideration, taking into account the range of fibers to which any proposed name should be applied. It was of interest that in this connection due consideration must be given to translation, particularly into the Latin languages.

Universal Yarn Counts. It was unanimously agreed that a universal yarn counting system should be adopted and that this system should be direct, decimal, and metric. The views in favor of the "gK" (grams per kilometer) system and the "grex" (grams per 10 kilometers) system were presented principally by the United Kingdom and the United States. The principal argument in favor of the "grex" system over the "gK" was that the use of decimals in ordinary yarn counts would be avoided. On the other hand, objections were raised to the introduction of 3- and 4-digit numbers. On a vote in the subcommittee between the two systems, the following favored the "gK" system: Czechoslovakia, Finland, France, Netherlands, India, Sweden, and USSR. Favoring the "grex" system were Belgium and the United States. Australia, New Zealand, Switzerland, and the United Kingdom answered "not voting." The subcommittee included in its report a note on the universal count system as follows:

"AS chairman of the United States delegation attending the meeting of the International Organization for Standardization (ISO) Technical Committee 38 on Textiles, held at Buxton, England, June 7 through 12, 1948, I am happy to report that it was the feeling of the American delegation that attendance at these meetings was well worthwhile. It is recommended strongly that the interested segments of the textile industry be kept posted as to developments in the field of international standardization in textiles in order that the interest which made possible the sending of the delegation might not be allowed to flag.

"The work already accomplished by the United States is before the committee and certain of its subcommittees for consideration in arriving at recommendations for the coordination and unification of national standards. It is important that prompt action be taken on requests for comments pertaining to international standards in order that delays may not convey the impression that the United States is losing interest in a field which is vitally important to textile manufacturers and to both importers and exporters."

—D. E. Douty

(*a*) It is considered that a better name for the system might be devised and that three words are needed to denote the property, adjective, and unit.

(*b*) The terms "melidity," "melid," and "mel" were proposed by a delegate for the property, adjective, and unit, respectively. Other proposals for the unit were "tex" and "new denier."

(*c*) It is suggested that the adoption of a universal system might be facilitated by publishing on every possible occasion the count in the universal system beside the count in the customary system and by the use of tables showing, in pairs of columns, the relationship between each of the systems now in use and the universal system.

The subcommittee also considered a proposal for the simplification on an international basis of the number (variety) of yarn counts with a view to reduction of the large number of yarns being manufactured in certain branches of the industry, and agreed that

(*a*) A general limitation on the variety of yarn counts on a logical basis is desirable.

(*b*) This limitation might be based on an approximate geometric series.

(*c*) The national standards organizations should be invited to examine the position in each part of the textile industry and to report back on the possibility of securing agreement to such a scheme.

NOTE: In this connection, attention might be drawn to the position in the United States filament rayon industry where a limited range of yarns was being successfully used for the manufacture of a wide range of fabrics.

NOTE: The French delegation pointed out that in this particular field the interests of the French rayon industry require carrying a large variety of yarns.

(*d*) Any committee appointed to consider standardization of counts should bear in mind the repercussions of such standardization on all other sections and levels of the textile industry (horizontal and vertical).

(*e*) It is also recommended that standardization of cloth widths merits consideration.

The committee adopted the report of the subcommittee on universal yarn counts without dissent, but Belgium abstained from voting.

Tests for Rayon Yarn, Rayon Staple, and Rayon Fabrics. The committee adopted the report of the subcommittee which recommended that the methods of test put forward by the British should not be adopted at the present time as a basis for international standards or recommendations. The report further recommended that work be commenced on methods of testing for all types of yarn with reference to:—

(*a*) General methods, e.g., tensile strength, twist, dry weight.

(*b*) Special methods, e.g., swelling in liquids.

The report further recommended that work should be commenced on methods of fiber testing with special reference to man-made fibers.

Tensile Testing of Fabrics. The committee adopted the report of the subcommittee on tensile testing of fabrics which included the following recommendations:

1. That it would be desirable to agree upon a basis for the tensile testing of textiles so that test results obtained in various laboratories and in various countries could be used for purposes of comparison.

2. That as far as possible the tensile test should be a measure of resistance to tension as distinct from resistance to tearing or distortion.

3. That the most suitable test for this purpose is the strip test.

4. That the detailed requirements for carrying out the test should be specified in both the metric and inch/lb systems and that the two sets of requirements should be approximately equivalent.

5. That the requirements for the test strips should be as follows:

(*a*) Width: 5 cm (or 2 in.)

(*b*) Distance between jaws: 20 cm (or 8 in.)

NOTE: It was suggested that consideration might be given to the use as an interim measure of a one-inch strip with a distance of 3 in. between the jaws.

(*c*) Width of fringe, if any: 0.5 cm (or ¼ in.) or 15 threads, whichever is the greater, unless otherwise agreed between the interested parties.

(*d*) Initial tension: The initial tension should be applied uniformly across the width of a strip without causing distortion or stretch. The initial tension should be as follows:—

(i) 200 g for cloths weighing less than 150 g per sq m

American Viscose Corporation

To compare test results around the world, the Buxton conference recommended establishment of an international basis for the tensile testing of fabrics.

(ii) 500 g for cloths weighing 150 to 500 g per sq m inclusive.

(iii) 1 kg for cloths weighing over 500 g per sq m or the equivalents in inch/pound units.

6. That preference should be given to constant rate of loading machines where these machines are available.

7. That the method of carrying out the test on constant rate of loading machines should be as follows:—

(*a*) Duration of test. The time taken to break the specimen should be 60 ± 10 seconds.

(*b*) Take-up. The take-up of the elongation should preferably be automatic but other methods may be used by agreement between the interested parties.

8. That the method of carrying out the test on constant rate of traverse machines should be as follows:

(*a*) Constant rate of traverse machines of the pendulum or spring types should be arranged with speed changing mechanism and operated so as to break the specimen in a standard time.

NOTE: There is some difference of opinion regarding the appropriate standard time but a majority of the subcommittee favor 60 ± 10 seconds.

(*b*) The type of machine used should be specified in the report of the test.

NOTE: The above recommendations are not intended to preclude the consideration at some future time of new types of testing machines.

Conditioning of Test Specimens. The committee adopted the report of the subcommittee which included the following recommendations for definitions and values for the conditioning of test specimens:

1. *Humidity.* The amount of water vapor contained in a given sample of air.

2. *Absolute humidity.* The weight of water vapor present in unit volume of moist air, i.e., grains per cu ft or grams per cu meter.

3. *Relative humidity.* The ratio of the absolute humidity of a given volume of air to its maximum possible humidity at the same temperature and pressure, this being numerically equal to the ratio of actual pressure of existing water vapor to maximum possible pressure of water vapor in the atmosphere at the same temperature expressed as a percentage.

4. *Dew point.* The temperature at which the saturation vapor pressure is equal to the actual (partial) vapor pressure of the water vapor in the air.

NOTE: In normal circumstances when air is cooled at constant pressure, condensation begins to occur at this temperature.

5. *Standard atmosphere.* To be subdivided under three headings:—

(*a*) Relative humidity.

(*b*) Temperature.

(*c*) Supplementary temperature.

NOTE: Although it is generally agreed that one standard atmosphere is the desired aim, the above compromise is accepted to cover conditions obtaining in tropical and sub-tropical countries.

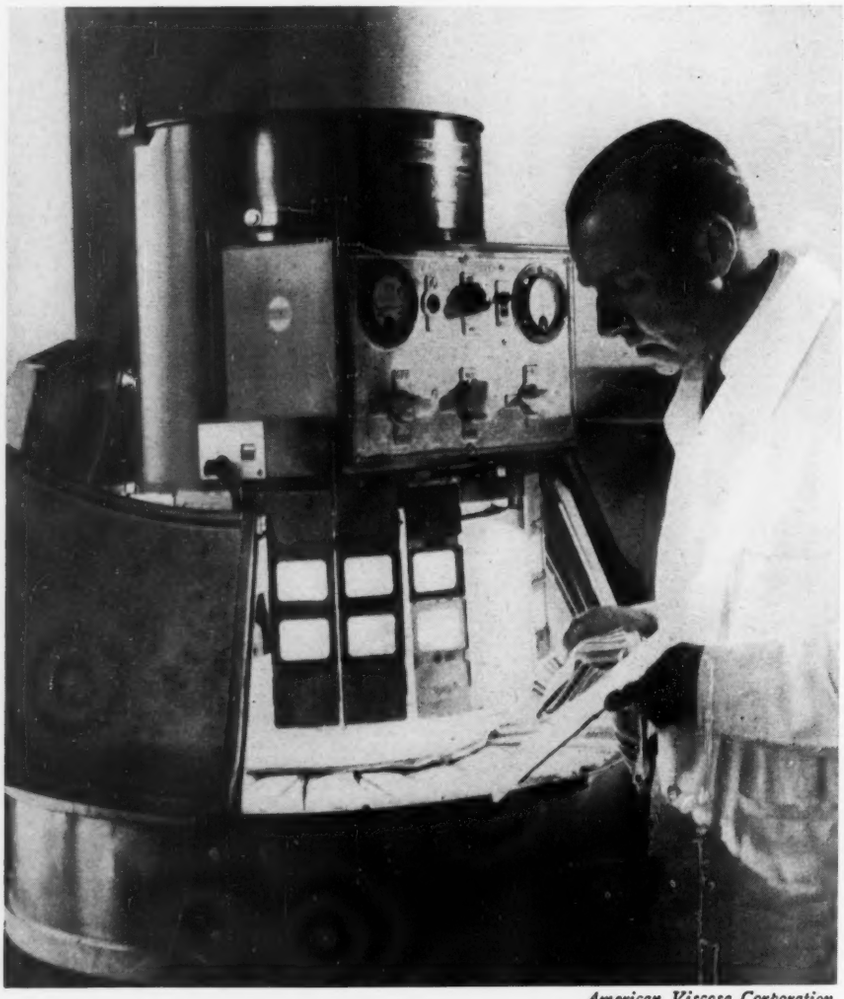
Values for adoption were:—

(*a*) Relative humidity of 65 percent.

(*b*) A temperature of 20 C (68 F).

(*c*) A supplementary temperature of 27 C (80.6 F).

6. *Atmosphere for testing.* The atmosphere for testing should allow tolerances of plus or minus 2 percent from the standard relative humidity and plus or minus 2 C from the standard temperatures, but the variation of temperature during any one series of tests should not be greater than plus or minus 1 C.



American Viscose Corporation

Tests for colorfastness with special reference to light, washing, and perspiration, will be considered in future work of the international committee.

In the subcommittee vote on this report, the United States abstained from voting because of not agreeing with the proposed temperature of 20 C (68 F) preferring 21 C (70 F). At the general session following, the U. S. withdrew objection in the interest of international agreement since the tolerances allowed were sufficiently great to cover the basic temperature used in the United States and the tolerances in American practice.

Program of Work for ISO Technical Committee 38 on Textiles. The program for future work was adopted as follows:

1. *Scope.* To ensure a common understanding among producers, manufacturers, converters, distributors, and consumers; this committee is concerned with the co-ordination and unification of national standards for all kinds of fabricated textilles and for the fibres, yarns, threads, and cords entering therein, including:—

(i) Textile agents or auxiliaries and chemical products required in processing and for testing and not otherwise covered by existing or future ISO technical committees.

(ii) Methods of test for each of the above.

(iii) Terms and definitions.

2. Adoption of the international agreement on "S" and "Z" twist which formed the subject of ISA

Bulletin No. 28 was endorsed by the committee to be submitted to the ISO Council for publication as the ISO Recommendation on "S" and "Z" Twist.

3. The committee selected subjects for initial consideration and for the purpose of gaining experience for the development of the program, as follows:—

(*a*) Cloth strength testing.

(*b*) Humidity and temperature, and conditioning.

(*c*) Sampling and statistical methods of analysis.

(*d*) Analysis of fiber mixtures.

(*e*) Commercial weights and moisture regains.

(*f*) Definitions and nomenclature.

(*g*) Color fastness tests, with particular reference to light, washing, and perspiration.

(*h*) Shrinkage of fabrics in washing.

(*i*) Restriction of the variety of cloth widths.

(*j*) Systematic restriction of variety of yarn counts.

(*k*) Cordage, ropes, etc.

(*l*) Methods of testing all types of yarn.

(*m*) Methods of fiber testing with special reference to man-made fibers.

(*n*) Determination of cloth width, length, weight, and structure.

NOTE: In considering methods of test, consideration should also be given to the performance requirements for the testing machines required.

Relationship between the International Wool Textile Organization and ISO Technical Committee 38 on Textiles in the Field of Wool Standards. The chairman of the technical committee of the IWTO reviewed the organization and work of his group and urged that advantage should be taken of the technical information available in the IWTO to assist in the work of Technical Committee 38. Mr Good, Director of the British Standards Institution, confirmed the intention of ISO Technical Committee 38 to collaborate with all national standards organizations and also with any international organization interested in the work of Technical Committee 38 by submitting or receiving any proposals for standardization work.

Standardization of Textile Machinery. A proposal by the Netherlands delegation that standardization be undertaken in the field of textile machinery, particularly in the matter of parts, was considered briefly and, on motion of the American delegation, was referred to the General Secretary of the ISO for further reference to the Technical Committee on Textile Machinery, whose establishment had been proposed by the Netherlands.

The United States delegation to the meetings at Buxton was made up of the following members:

D. E. Douty, Chairman of Board, United States Testing Company, Inc; designated by American Council of Commercial Laboratories, National Federation of Textiles, Inc, and New York Board of Trade; *Chairman*

William D. Appel, Chief, Textiles Section, National Bureau of Standards, U. S. Department of Commerce; designated by the National Bureau of Standards

H. J. Ball, Head of Textile Engineering Department, Lowell Textile Institute; designated by the American Society for Testing Materials

J. Robert Bonnar, Technical Director, General Dyestuff Corporation; designated by American Association of Textile Chemists and Colorists

Frederic Bonnet, American Viscose Corporation; designated by American Association of Textile Technologists, New York Board of Trade, National Retail Dry Goods Association

George S. Buck, National Cotton Council; designated by the National Cotton Council

Carl M. Conrad, Southern Regional Research Laboratory, U. S. Department of Agriculture; designated by the Bureau of Agriculture and Industrial Chemistry

J. B. Goldberg, Director of Research, J. P. Stevens & Co, Inc; designated by American Association of Textile Technologists, Inc, National Federation of Textiles, Inc, Textile Research Institute, New York Board of Trade

Dr John I. Hardy, Senior Animal Fiber Technologist to the Bureau of Animal Industry Agricultural Research Center, U. S. Department of Agriculture; member of the American Association for Advancement of Science; member of Committee D-13 on Textiles of American Society for Testing Materials; designated by U. S. Department of Agriculture

Vice-Admiral G. F. Hussey, Jr, USN (Ret), Secretary, American Standards Association; designated by the American Standards Association

Edward T. Pickard, Secretary, The Textile Foundation; designated by The Textile Foundation, The Textile Research Institute

A. G. Scroggie, E. I. du Pont de Nemours & Co, Inc, Rayon Department; designated by American Society for Testing Materials

C. D. Thompson, Ensign-Bickford Company, Simsbury, Connecticut; member of Committee D-13, American Society for Testing Materials; advisor on bast fiber products

D. L. Worf, Office of Naval Research, U. S. Navy; designated by Office of Naval Research

The meeting was attended by representatives from 13 countries, delegations varying in size as follows: Australia, 1; Belgium, 1; Czechoslovakia, 4 (arrived on June 10); Finland, 3; France, 5; India, 5; Netherlands, 5; New Zealand, 2; Sweden, 1; Switzerland, 1; United Kingdom, 49 (members attended during discussions of most interest to their branches of the industry); United States, 14; USSR, 2 (arrived on June 10).

Also present were the general secretary of the International Organization for Standardization, Henry St Leger, and T. F. C. Salt, an engineer of the ISO staff.

Results of International Meeting Presented to Industry

A program at the Waldorf-Astoria Hotel on September 24 enabled executives and technical leaders in the textile field to hear, first-hand, the results of the meetings of the International Organization for Standardization's Technical Committee 38 on Textiles held in England last June.

Howard Coonley, president of the ISO and chairman of the executive committee of the American Standards Association, presided over this special meeting called by the ASA in conjunction with the ten technical societies and trade associations which named members to the American delegation.

D. E. Douty, chairman of the board of the U.S. Testing Company and chairman of the delegation to England, presented a general report, including in his summation the basis on which the question of the Secretariat for the Textile Committee was settled.[1]

Special reports were made by:

Dr W. D. Appel, chief, Textile Section, National Bureau of Standards, on *Textile Test Methods*

George S. Buck, National Cotton Council, on *Atmospheric Conditions*

Dr A. G. Scroggie, du Pont de Nemours & Company, Inc, on *Universal Yarn Count and Definition of the Term "Rayon"*

Professor H. J. Ball, Lowell Textile Institute, on the *Program of Future Work*

J. R. Bonnar, technical director, General Dyestuff Corporation, on *Colorfastness*

[1] Assignment of the Secretariat for the committee to the United Kingdom was confirmed by agreement between the delegations from the United States and the United Kingdom.

What South African Architects Face In Designing a Building

STEADY progress is being made with the preparation of the building regulations and a code of building practice, which will eventually be adopted throughout the Union [of South Africa].

The existing situation in which by-laws and regulations vary considerably from city to city and town to town (except for twelve Transvaal towns which all subscribe to the same code), is the South African architect's most difficult problem, especially an architect with a Union-wide practice.

An Example of the South African Architect's Procedure

Should, for instance, a Johannesburg architect be asked to design a building for a country town, he must first secure a set of the local building regulations. All too frequently he is informed that these are out of print, but "may be inspected at the office of the town engineer." This entails a journey to the town to discover the points on which the local regulations differ from those with which he is conversant. If he fails to notice some obscure clause, as he may well do, his oversight may result later in a considerable loss of money and time. To make his task even more difficult, many of the clauses in the local regulations may contain the somewhat unsatisfactory and indefinite phrase "shall be to the satisfaction of the town engineer."

Illustrative of the differences between the building regulations are those of the Union's two largest cities —Johannesburg and Cape Town.

When designing a reinforced concrete building for Cape Town, an architect must order his structural engineer to work on a design basis of 16,000 pounds per square inch permissible working maximum tensile stress for his steel reinforcing. Should the building be intended for Johannesburg, however, a design stress of 18,000 pounds is allowed.

In Cape Town, all habitable rooms must have a clear minimum height of ten feet if on the ground floor and nine feet six inches if on the first floor. In Johannesburg, all rooms intended for occupation must have a minimum height of nine feet.

The height of buildings is a further matter of difference. No Cape Town building, other than Government structures, may exceed 120 feet. In Johannesburg, provided that the width of the street be sufficient and that adjoining owners do not object, the regulations permit buildings of 140 feet (or even higher if the cubic content be the same as that allowed for a 140-foot building).

The two cities do not even agree on drainage. Johannesburg plumbers may install two-and-a-half gallon lavatory flushing cisterns, but in Cape Town a plumber would "on conviction be guilty of an offence and liable, etc," if the cistern does not have a capacity of three gallons. Six-inch diameter sewerage pipes in Cape Town must not be laid at a lesser incline than 1 in 60; in Johannesburg, a gradient of 1 in 90 is allowed.

Differences in Public Building Ventilation

The standard of public building ventilation in Johannesburg is defined by a Kata-thermometer figure, but in Cape Town this ventilation must be such as to "cause a slow and imperceptible movement of the atmosphere without the causing of draughts."

Kitchen fireplaces are not compulsory in Johannesburg, but more conservative Cape Town provides for them by means of a regulation, which, in practice, however, is no longer enforced.

In view of the variations in climate, topography, geology, and other factors, it is understandable that regulations in various parts of the country should differ. For instance, most Johannesburg roofs must have a pitch of more than 20 degrees for a wind load of 15 pounds per square foot windward and a non-simultaneous leeward wind load of 10 pounds per square foot; in Cape Town with its southeasters, however, the figure is 28 pounds per square foot in each case. Again, Cape Town with its heavy winter rainfall demands that walls of ordinary brick be plastered inside and outside, a regulation unnecessary in Johannesburg.

Committee Organized to Devise Standard Rules

The Committee on Building Regulations and Codes, which is now hard at work on its task of devising rules which will be applicable throughout the country, started in 1945 as a com-

Union of South Africa Government Information Office

The old and the new modes of architecture are reflected along many of Johannesburg's streets as postwar building gets under way.

NOTE: This article is reprinted from the *South African Standards Bulletin.*

mittee of the South African branch of the Institution of Structural Engineers. The necessary administrative work, however, became too great for such a voluntary body, and it was therefore agreed in September, 1946, that it should be taken over by the Standards Council. Its initial composition was virtually unchanged except for the addition of representatives of the South African Bureau of Standards.

It was soon found that building regulations covered such a wide field that it would be an impossible task for a single committee. The Standards Council, therefore, decided that the original committee should deal only with the structural aspects of building and that additional committees should be formed to cover the architectural and installation aspects.

The lengthy and complicated work of preparing the proposed regulations and code is now divided between three committees and their subcommittees, each of the latter being responsible for the framing of a chapter of the regulations.

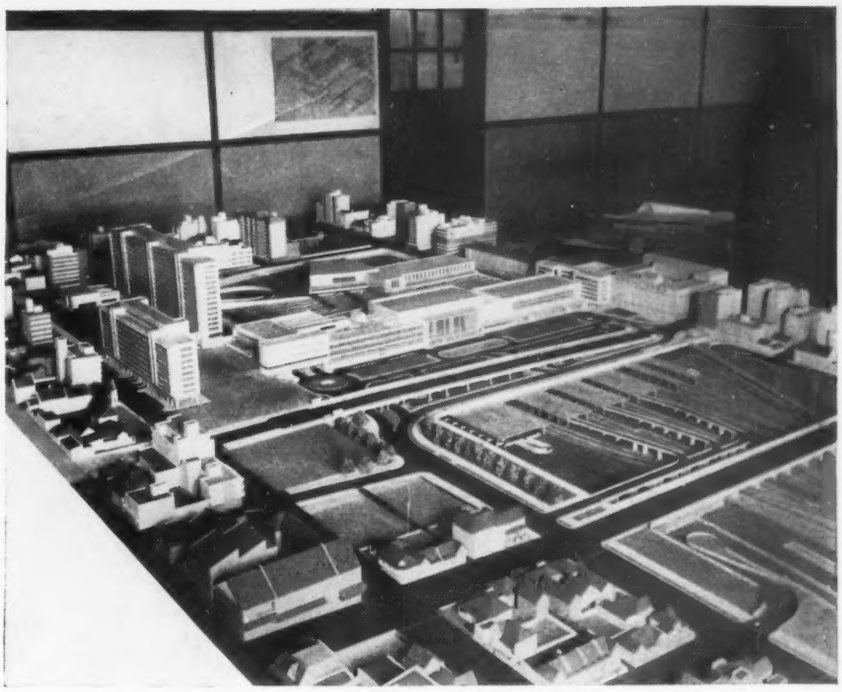
To co-ordinate the work of the three main committees, the Standards Council has established a Co-ordinating Committee, the main concern of which is policy.

In Order Not to Delay Work Separate Draft Chapters to be Issued

Rather than delay the issue of any chapter until the completion of the whole work (which may be a matter of considerable time), it has been considered expedient to issue the separate draft chapters as completed and to circulate them to more than 200 South African municipalities, to public bodies, to professional institutions, to universities, and to governmental and provincial departments, in addition to oversea bodies.

The purpose of this wide circulation is to ensure that every opportunity is given for comment, criticism, and improvement of the draft chapters. Only by co-operation from all bodies concerned will uniformity of building regulations and standardization of codes be attained.

Looking to the future, it is realized that it is impossible to devise regulations in anticipation of the new materials and new methods of construction which are constantly being developed. To provide for these advances, an omnibus clause will be included in the regulations, making provision for their employment, if considered satisfactory by the South African Bureau of Standards and the National Building Research Institute.



Union of South Africa Government Information Office

A model of the proposed modern Johannesburg station. Plans for its construction will incorporate the latest features in architectural design.

Canada Comments on a Common Fear Concerning Standards

"Some people fear regimentation as the result of standardization. They confuse different aspects of things. Every man is standard, every tree is standard, and yet no two men and no two trees are exactly the same. It is inconceivable that Canadians could ever tolerate being fed alike, housed alike, clothed alike; but they might welcome standardization in the sense of a guarantee of certain specific qualities attaching to food, houses, and clothes.

"Freedom of choice and changing styles provide the greatest safeguards against useful standards degenerating into regimentation. Standards present facts, upon which people can exercise judgment, but their judgment is moved by their desires. While consumers are willing to pay for variety and uniqueness, there is no fear of manufacturers going too far in standardization. The consumer is not merely a customer, he is a compendium of biology, psychology, economics, many other sciences, and some of the arts. A make-up like that does not lend itself readily or willingly to regimentation."

—*Quarterly Bulletin of the Canadian Standards Association.*

"New Look" May Envelop British Transport System

Since the government has assumed operation of the railroads in Great Britain, standardization in train color is being considered. Already railway-owned Cross-Channel steamships have been affected. Henceforth, they will sport beige-colored smokestacks surrounded by a black band, while the hulls will be black with white superstructure. Should the distinctive colors of the former individual companies be banished, 'twill be a gloomy day for many ardent railroad fans.

"To standardize means to put a country in order in such a way that the order is the same in all its enterprises, and that the order of the producer is the same as that of the consumer. It is this order, or rather, this standardization, which constitutes progress. Standardization does not oppose progress, because it is progress in itself."

—From the work of Ernest Lhoste, former Director-General of the Association Française de Normalisation

Fire—Every Twenty Seconds!

By Percy Bugbee

October 3-9 set aside as this year's annual "Fire Prevention Week"; National Fire Protection Association traditional sponsor

Mr Bugbee is General Manager of the National Fire Protection Association.

NEEDLESS fire is jeopardizing the lives of our citizens and the economy of our nation. According to the Fire Record Department of the National Fire Protection Association, somewhere in this land of ours a fire breaks out every 20 seconds—right around the clock. In a year's time about 11,000 Americans die in fires and more than twice that number are badly burned or disfigured for life. At the present rate of burning, about two million dollars' worth of valuable materials "go up in smoke" every day.

The tragedy of the disgraceful U. S. fire record is that it has been statistically proven that 90 per cent of the fires that threaten our well-being are preventable.

President Truman, the Governor-General of Canada, and the governors of the several states have proclaimed the week of October 3-9, 1948, as Fire Prevention Week.

Fire Prevention Day First Observed in 1911

Fire Prevention Day was inaugurated and first observed throughout the United States on October 9, 1911. It began when the Fire Marshals' Association of North America (now an NFPA Section) suggested that the fortieth anniversary of the Great Chicago Fire of 1871 be set apart for bringing before the public the much-needed lesson of fire prevention.

In 1920, President Wilson issued the first Fire Prevention Day proclamation, but it was not until 1922 that the whole week containing Fire Prevention Day (October 9) was officially proclaimed "Fire Prevention Week" by President Harding.

Since that time, each President in turn has proclaimed the week containing October 9, the anniversary of the Great Chicago Fire, as "Fire Prevention Week", an institution now so thoroughly established that each year individuals and organizations in every state, city and town in the United States and every province in Canada look forward to participating in its observance as the beginning of an entire year of intensive fire-safety work.

Fire Prevention Week's purpose is to emphasize in the public mind the enormous waste resulting from uncontrolled fire and to enlist the cooperation of all elements in the community in effecting actual reduction of fire waste.

Maximum effectiveness of the Fire Prevention Week program is attained when specific activities are conducted that:

(1) reveal the causes of fire waste, both locally and nationally, in terms of loss of life, injury, and economic waste;

(2) acquaint the public with the simpler causes of fire and inform them of precautions that should be taken in the prevention of fire and the protection of life and property against fire;

(3) indicate what each individual can do to reduce the danger of fire and what the community as a whole can do to reduce its fire loss; and

(4) provide, as far as possible, both the incentive and the opportunity for individual activity and cooperation.

The National Fire Protection Association, traditional sponsor of Fire Prevention Week, has been the clearinghouse for information that is authoritative on the subject of fire control since 1896 when it was organized in Boston.

Noncommercial and nonprofit-making, the Association is supported by the dues of its members, which membership now includes over one hundred and seventy national and regional organizations and over thirteen thousand individuals, firms, and corporations. Membership is open to any individual interested in the protection of life and property against loss by fire.

Functions of the National Fire Protection Association

The Association has two functions: one, to provide standards under the guidance of which fire waste may be checked; the other, to educate the public so that the loss of life and injury from fire will be reduced and the needless fire destruction of property will be halted.

NFPA standards are prepared by impartial committees, consisting of representatives from the Association's organization members, U. S. and Canadian governmental departments, and cooperating bodies. Widely used by state, provincial, and municipal governments as the basis of legislation, also as the basis of insurance requirements, and as a guide by the increasing number of property owners demanding the maximum of fire

safety, the standards receive constant revision to keep them in step with progress in science, invention, and the industrial arts.

The Association's technical committee members are expert fire prevention engineers who serve without pay. Indeed, it can be said that never has as much public effort—of expert thought and painstaking technical investigation—been given freely for so long a period as has been devoted to the work of the National Fire Protection Association.

Maintains Staff to Encourage Outside Fire Prevention Work

Since 1924, the Association has maintained a staff of field engineers to organize, stimulate, and encourage fire prevention committees. These men have frequently recommended definite programs for the improvement of municipal fire hazard conditions. One of the Association's engineers is employed solely to promote wide recognition of the National Electrical Code, which governs the safe installations of electrical wiring and equipment.

In keeping with its standardization program, NFPA is a member of the Fire Protection Group of the American Standards Association. As such, NFPA has been extremely active in the work of sectional committees dealing with all phases of civil engineering and construction, electrical, and mechanical projects having to do with the development of safety and fire prevention measures.

The NFPA meets annually in a four-day convention, at which time the latest developments in fire prevention and fire protection are discussed and committee reports on technical standards are acted upon. The 1949 NFPA Annual Meeting is scheduled for San Francisco, May 16-19.

The Association has a Fire Marshals' Section, composed of state, provincial, and city fire marshals, which is active in promoting the work of all such officials.

Fort Worth Texas Telegram

The nation's fire record shows a yearly loss of almost $2,000,000 worth of material. Statistics prove that 90 percent of these fires are preventable.

The Railroad Section of the NFPA, including representatives of large railroad systems, provides a medium for the consideration of activities in rail fire protection.

The Association also has a Volunteer Fire Company Section. This Section, through the monthly magazine, *Firemen*, reaches thousands of volunteer firemen.

The *Quarterly Magazine* of the NFPA is unique in its special articles. Its editorial matter is clearly and forcefully written and its carefully edited department of fire record is indispensable to those studying fire causes and effects. In the *Quarterly* are described the important fires occurring in the United States and Canada, with special reference to their origin, their extent, and the manner of their extinguishment. By a special method of cataloging, statistical records are so kept as to permit the publication of fire statistics on special classes of property or occupancy, showing how the majority of such fires start, and how, in the cases given, they were extinguished. Studies are also made of the effect of fire on the buildings of fire-resistive construction.

Special posters and bulletins are issued throughout the year; an interesting and up-to-the minute *News Letter* is distributed monthly, and, during the year, many individual papers and reports on specific topics are sent to members. Copies of the Association's standards are made available to members when they are published.

The NFPA maintains that the "blueprints" for fire safety are easily available but that the fire control problem today is to put these tenets into conscientious application in our day-to-day living.

• • • NEWS BRIEFS • • •

● W. N. Goodwin, Jr, well-known in ASA circles for his sectional committee work, has completed 50 years with the Weston Electrical Instrument Corporation. Now retired, he serves Weston as a consultant and continues his studies in instrument design and measurement theory.

● A 1948 fall training conference on time and motion study will be conducted at the Illinois Institute of Technology, Chicago, October 7-8. Subjects to be discussed include industrial engineering, wage incentive plans, standard elemental data, and work measurement.

● John T. Ryan, Jr., has been elected a director of Thomas A. Edison, Inc. He is executive vice-president of Mine Safety Appliances Company and is active on several ASA committees including the Mining Standardization Correlating Committee and the Safety Code Correlating Committee.

New Appointments to Standards Council

The following new representatives have been appointed by Member-Bodies to the Standards Council, highest authority on technical work of the American Standards Association:

Dr Paul H. Nystrom

Dr Nystrom, president of the Limited Price Variety Stores Association, Inc, is Professor of Marketing at Columbia University.

Limited Price Variety Stores Association, Inc—

Dr Paul H. Nystrom, president of the LPSVA, will serve as its representative on the Council for a term of three years ending December 31, 1950.

Clyde T. Nissen, also of the LPSVA, will serve as his alternate. Mr Nissen is also a member of the Consumer Goods Committee, the Sectional Committee on Definitions of Terms Used in Retailing, Z36, and the Sectional Committee on Textile Test Methods, L14.

Screw Industry Standards Committee—

Alan R. Martin, chairman of the SISC, will continue to represent that organizatiion on the Standards Council until the expiration of his term on December 31, 1948. He is an alternate member of the Sectional Committee on Bolt, Nut, and Rivet Proportions, B18.

Frank K. Brown of the Continental Screw Company succeeds Frank P. Tisch as alternate for Mr Martin. He is also an alternate on the Sectional Committee on Standardization and Unification of Screw Threads, B1, representing the U. S. Machine Screw Service Bureau.

Railroad Group Names Shoemaker To ASA's Board of Directors

Perry M. Shoemaker, vice-president of the Lackawanna Railroad in charge of operations, has been elected to the ASA Board of Directors. He represents the Association of American Railroads.

Mr Shoemaker began his career in transportation while attending the University of Michigan where, during summer vacations, he was employed as a track laborer by the Pennsylvania Railroad.

His first permanent employment was by the Erie Railroad as dynamometer assistant, then terminal yardmaster, and general yardmaster.

Mr Shoemaker became research assistant of the New York, New Haven, and Hartford Railroad in 1934 and, subsequently, he was promoted to superintendent of freight transportation by that company.

He entered the service of the Lackawanna Railroad in 1941 as transportation assistant, advancing to superintendent, general superintendent, and general manager. On the first of this year, he was elevated to the office of vice-president.

SCPI Publishes Information On Fire Resistance of Tile

Information on the fire resistance of structural clay facing tile is published in a research report of the Structural Clay Products Institute.

According to Roy A. Shipley, president of SCPI, the report recommends, for the first time, fire resistance ratings up to three hours for four inch and six inch structural clay facing tile walls. So important are these findings considered by SCPI that they are sending the report to specification writers in all national insurance code writing bureaus, as well as municipal, regional, and national building code authorities.

Research for the report was conducted at the Engineering Experiment Station, Ohio State University.

Government Recognizes Textile Industry's Tests

Textile industry testing standards of 65 percent relative humidity and 70 F will continue to be recognized in government procurement under a resolution adopted by the Federal Specifications Board, announces the *Journal of Commerce*.

This decision was a victory for the textile industry which has fought for some time to exclude textiles from the recommended general standard laboratory testing condition for most materials which is 50 percent relative humidity and 73.5 F, the *Journal* continues.

Richard J. Durley

Richard J. Durley, first secretary of the Canadian Standards Association, died August 13 in Montreal.

Mr Durley served the Association from 1919 to 1925, leaving in that year to become Secretary of the Engineering Institute of Canada. He played an active role in establishing the close cooperation between the various national standardizing bodies which developed into a formal organization, now the International Organization for Standardization (ISO). He participated in conferences of the national bodies held in London in 1921 and in Zurich in 1923. He also was instrumental in developing the spirit of close harmony which has always existed between the Canadian Standards Association and the American Standards Association.

ASA STANDARDS ACTIVITIES

Status of Standards As Of September 10, 1948

American Standards Approved Since August 18, 1948

Specifications for Shock-Testing Mechanism for Electrical Indicating Instruments, C39.3-1948 (Revision of American War Standard C39.3-1943)

Sponsor: Electrical Standards Committee

Circular and Dovetailed Forming Tool Blanks, B5.7-1948 (Revision of B5.7-1943)

Sponsors: American Society of Mechanical Engineers; Metal Cutting Tool Institute; National Machine Tool Builders' Association; Society of Automotive Engineers

Standards Being Considered for Approval

By the Standards Council—

Graphical Symbols for Electron Devices, Z32.10 (Revision of Z32.10-1944)

Sponsors: American Society of Mechanical Engineers; American Institute of Electrical Engineers

Approval Requirements for Domestic Gas Ranges (Revision of Z21.1-1942)

Requirements for Installation of Domestic Gas Conversion Burners (formerly American Standard Requirements for Installation of Conversion Burners in House Heating and Water Heating Appliances) (Revision of Z21.8-1940)

Approval Requirements for Hot Plates and Laundry Stoves (Revision of Z21.9-1940)

Approval Requirements for Gas Space Heaters (Revision of Z21.11-1942)

Listing Requirements for Domestic Gas Conversion Burners (Revision of Z21.17-1940)

Listing Requirements for Automatic Main Gas Control Valves (Revision of Z21.21-1935)

Approval Requirements for Portable Gas Baking and Roasting Ovens (Revision of Z21.28-1941)

Sponsor: American Gas Association

Dimensions for Theater Projection Screens, Z22.29 (Revision of Z22.29-1946)

Theater Sound Test Film for 35-Millimeter Motion Picture Sound Reproducing Systems, Z22.60

Laboratory-Type Sound Focusing Test Film for 35-Millimeter Motion Picture Sound Reproducers, Z22.62

Service-Type Scanning Beam Uniformity Test Film for 35-Millimeter Motion Picture Sound Reproducers, Z22.65

Laboratory-Type Scanning Beam Uniformity Test Film for 35-Millimeter Motion Picture Sound Reproducers, Z22.66

1000-Cycle Balancing Test Film for 35-Millimeter Motion Picture Sound Reproducers, Z22.67

Sound Record and Scanning Area of Double Width Push-Pull Sound Prints (Centerline Type), Z22.69

Sound Record and Scanning Area of Double Width Push-Pull Sound Prints (Offset Centerline Type), Z22.70

Sponsor: Society of Motion Picture Engineers

Letter Symbols for Physics, Z10.6

Sponsors: American Association for the Advancement of Science; American Institute of Electrical Engineers; American Society of Civil Engineers; American Society for Engineering Education; American Society of Mechanical Engineers

Specifications for Slab Zinc (Spelter) (Revision of ASTM B6-46; ASA H24.1-1946)

Specifications for Copper Water Tube (Revision of ASTM B88-47; ASA H23.1-1947)

Specifications for Copper and Copper-Base Alloy Forging Rods, Bars, and Shapes (Revision of ASTM B124-47; ASA H7.1-1947)

Specifications for Zinc-Coated (Galvanized) Iron or Steel Farm-Field and Railroad Right-of-Way Wire Fencing (Revision of ASTM A116-39; ASA G8.9-1944)

Specifications for Zinc-Coated (Galvanized) Iron or Steel Barbed Wire (Revision of ASTM A121-39; ASA G8.10-1944)

Specifications for Gray Iron Castings (Revision of ASTM A48-46; ASA G25.1-1947)

Method of Drop Shatter Test for Coke (Revision of ASTM D141-23; ASA K20.4-1936)

Methods of Laboratory Sampling and Analysis of Coal and Coke (Revision of ASTM D271-46; ASA K18.1-1946)

Proprietary Sponsor: American Society for Testing Materials

By the Board of Review—

Practice for School Lighting, A23

Sponsors: American Institute of Architects; Illuminating Engineering Society

Revision of Discoloration Test of the Safety Code for Safety Glass for Glazing Motor Vehicles Operating on Land Highways (Revision of Z26.1-1938)

Sponsors: Association of Casualty and Surety Companies; National Bureau of Standards

By the Board of Examination—

Dimensions for Radiographic Intensifying Screens, Z38.1.50

Method for Determining the Melting Point of the Photographic Layer of Films, Plates, and Papers, Z38.8.20

Dimensions for 70-Millimeter Perforated (and Unperforated) Film (Revision of Z38.1.2-1941)

Sponsor: Optical Society of America

Specifications for Salt-Water Soap (ASTM D 593-42; K60.13)

Specifications for Liquid Toilet Soap (ASTM D 799-45; K60.14)

Specifications for Olive Oil Chip Soap (Type A, Pure; Type B, Blended) (ASTM D 630-42; K60.15)

Specifications for Palm Oil Chip Soap (Type A, Straight; Type B. Blended) (ASTM D 536-42; ASA K60.16)

Specifications for Modified Soda (Sesquicarbonate Type) (ASTM D 457-39; ASA K60.17)

Specifications for Sodium Metasilicate (ASTM D 537-41; ASA K60.18)

Specifications for Sodium Sesquisilicate (ASTM D 594-41; ASA K60.19)

Specifications for Tetrasodium Pyrophosphate (Anhydrous) (ASTM D 595-45; ASA K60.20)

Methods of Sampling and Chemical Analysis of Special Detergents (ASTM D 501-46; ASA K60.21)

Sponsor: American Society for Testing Materials

By the Safety Code Correlating Committee—

Allowable Concentration of Manganese (American War Standard), Z37.6-1942

Sponsor: U. S. Public Health Service

By the Consumer Goods Committee—

Accelerated Ageing of Textile Dyes with Sulfur, L14.1

Colorfastness of Textiles to Acids and Alkalies, L14.2

Colorfastness of Wool Textiles to Carbonizing, L14.3

Colorfastness of Silk to Degumming, L14.4

Colorfastness of Textiles to Fulling, L14.5

Colorfastness of Wool Textiles to Mill Washing and Scouring, L14.6

Colorfastness of Silk to Peroxide Bleaching, L14.7

Colorfastness of Textiles to Sea Water, L14.8

Colorfastness of Textiles to Stoving, L14.9

Test for Mercerization, L14.10

Evaluation of Wetting Agents, L14.11

Definition of Terms Relating to Textile Materials (ASTM D 123-47; ASA L14.12)

General Methods of Testing and Tolerances for Cotton Yarn (Tentative) (ASTM D 180-47T; ASA L14.13)

Methods of Testing and Tolerances for Cotton Sewing Threads (ASTM D 204-42; ASA L14.14)

Methods of Test for Osnaburg, Cement Sacks (ASTM D 205-39; ASA L14.15)

Methods of Testing and Tolerances for Woven Tapes (ASTM D 259-44; ASA L14.16)

Methods of Testing and Tolerances for Certain Light and Medium Weight Cotton Fabrics (ASTM D 274-36; ASA L14.17)

Methods of Test for Asbestos Yarns (ASTM D 299-42; ASA L14.18)

Method of Determining Relative Humidity (ASTM D 337-34; ASA L14.19)

Methods of Test for Holland Cloth (ASTM D 376-35; ASA L14.20)

Methods of Testing and Tolerances for Woolen Yarns (ASTM D 403-44; ASA L14.21)

Methods of Testing and Tolerances for Worsted Yarns (ASTM D 404-44; ASA L14.22)
General Methods of Testing Cotton Fibers (Tentative) (ASTM D 414-47T; ASA L14.23)
Method of Test for Strength of Rayon Woven Fabric When Wet (ASTM D 415-38; ASA L14.24)
Method of Testing Pile Floor Covering (ASTM D 418-42; ASA L14.25)
Methods of Test for Fineness of Wool (Tentative) (ASTM D 419-47T; ASA L14.26)
Methods of Testing and Tolerances for Certain Carded Cotton Gray Goods (ASTM D 433-39; ASA L14.27)
Methods of Testing and Tolerances for Certain Wool and Part Wool Fabrics (ASTM D 462-44; ASA L14.28)
Methods of Test for Fineness of Wool Tops (Tentative) (ASTM D 472-47T; ASA L14.29)
Methods of Testing and Tolerances for Spun Rayon Yarns and Threads (ASTM D 507-44; ASA L14.30)
Methods of Testing and Tolerances for Yarns Spun from Mixed Fibers (ASTM D 508-43; ASA L14.31)
Method of Test for Fiber Length of Wool (ASTM D 519-40; ASA L14.32)
Methods of Testing Rayon Staple (ASTM D 540-44; ASA L14.33)
Methods of Testing and Tolerances for Single Jute Yarn (ASTM D 541-41; ASA L14.34)
Methods of Testing Woven Asbestos Cloth (ASTM D 577-42; ASA L14.35)
Methods of Testing and Tolerances for Glass Yarn (Tentative) (ASTM D 578-47T; ASA L14.36)
Methods of Testing and Tolerances for Woven Glass Fabrics (ASTM D 579-47; ASA L14.37)
Methods of Testing and Tolerances for Woven Glass Tapes (ASTM D 580-47; ASA L14.38)
Methods of Testing and Tolerances for Woven Glass Tubular Sleeving and Braids (ASTM D 581-44; ASA L14.39)
Method of Test for Hard Scoured Wool in Wool in the Grease (Laboratory Scale Operations) (ASTM D 584-47; ASA L14.40)
Methods of Testing Asbestos Tubular Sleeving (ASTM D 628-44; ASA L14.41)
Methods of Testing and Tolerances for Certain Fine Staple Cotton Gray Goods (ASTM D 679-44; ASA L14.42)
Methods for Testing and Tolerances for Certain All-Cotton and Cotton-and-Rayon Fine Fancy Goods (ASTM D 680-44; ASA L14.43)
Methods of Testing and Tolerances for Jute Rove and Plied Yarn for Electrical and Packing Purposes (Tentative) (ASTM D 681-42T; ASA L14.44)
Methods of Testing and Tolerances for Rope (Leaf and Bast Fibers) (ASTM D 738-46; ASA L14.45)
Methods of Testing and Tolerances for Spun, Twisted, or Braided Products Made from Flax, Hemp, Ramie, or Mixtures Thereof (ASTM D 739-46; ASA L14.46)
Method of Test for Compatibility of Glass Yarn with Insulating Varnish (Tentative) (ASTM D 886-46 T; ASA L14.47)
Recommended Practice for a Universal System of Yarn Numbering (ASTM D 861-47; ASA L14.48)
Sponsors: American Society for Testing Materials; American Association of Textile Chemists and Colorists
Chip Soap (ASTM D 496-39; ASA K60.1)
Ordinary Bar Soap (ASTM D 497-39; ASA K60.2)
Powdered Soap (ASTM D 498-39; ASA K60.3)
White Floating Toilet Soap (ASTM D 499-39; ASA K60.4)
Alkaline Soap Powder (ASTM D 534-42; ASA K60.5)
Milled Toilet Soap (ASTM D 455-39; ASA K60.6)
Built Soap, Powdered (ASTM D 533-44; ASA K60.7)
Compound Chip Soap (With Rosin) (ASTM D 690-44; ASA K60.8)
Compound Powdered Soap (Granulated, with Rosin) (ASTM D 691-44; ASA K60.9)
Caustic Soda (ASTM D 456-39; ASA K60.10)
Soda Ash (ASTM D 458-39; ASA K60.11)
Trisodium Phosphate (ASTM D 538-44; ASA K60.12)
Sponsor: American Society for Testing Materials

By the Building Code Correlating Committee—

Administrative Requirements for Building Codes, A55 (Revision of A55.1-1944)
Sponsors: American Municipal Association; Building Officials Conference of America
Sponsor: American Society for Testing Materials

By the Mechanical Standards Committee—

Cast-Iron Pipe Flanges and Flanged Fittings (Class 125), B16.1 (Revision of B16a-1939)
Sponsors: Heating, Piping, and Air Conditioning National Association; Manufacturers Society of the Valve and Fittings Industry; American Society of Mechanical Engineers

Standards Submitted to ASA for Approval

Painting Specifications, A95
Sponsor: Painting and Decorating Contractors of America
Pool Cathode Mercury-Arc Power Converters (AIEE No. 6), C34
Sponsor: American Institute of Electrical Engineers

American Standards Reaffirmed

Definition of Safety Photographic Film, Z38.3.1-1943 Reaffirmed 1948
Specifications for Projectors for Opaque Materials for Use in Small Auditoriums, Z38.7.4-1944 Reaffirmed 1948
Specifications for Contact Printers, Z38.7.-10-1944 Reaffirmed 1948
Specifications for Printing Frames, Z38.7.-11-1944 Reaffirmed 1948
Specifications for Masks (Separate) for Use for Photographic Contact Printing, Z38.7.12-1944 Reaffirmed 1948
Sponsor: Optical Society of America

American Standards Being Considered for Reaffirmation

By the Board of Examination—

Designation of Emulsion Side of Photographic Sheet Films, Z38.1.42-1944
Practice for Temperature of Processing Solutions, Z38.8.1-1944
Sponsor: Optical Society of America

Withdrawal of Approval Being Considered

By the Board of Review—

Allowable Concentration of Metallic Arsenic and Arsenic Trioxide (American War Standard), Z37.9-1943

By the Board of Examination—

Photographic Filter Terminology and Nomenclature, Z52.61-1945 (American War Standard)
Pressure-Temperature Ratings for Cast-Iron Pipe Flanges and Flanged Fittings, B16a1-1943 (American War Standard)

News About Projects

Mechanical Refrigeration, B9—

Sponsor: American Society of Refrigerating Engineers

A newly revised draft of the Safety Code for Mechanical Refrigeration has been presented to the ASA Sectional Committee B9 by its code drafting subcommittees. This means that the greater part of the work of revision has been accomplished and, judging from the number of inquiries received, it will be very welcome news to representatives of all phases of the refrigeration industry who are interested in safety standards.

Rapid strides have been made in the past nine years in improving refrigeration equipment and installations. The present B9 Safety Code, while considered the best and most generally accepted in existence, is not in step with these changes. In the light of new developments, many stipulations in the old code are too strict, while many new practices are not even covered.

Since the war, many state and city governments responsible for regulating air conditioning and refrigeration installations have become active in revising or establishing new safety codes. With public safety their prime concern, they must have a code which will prescribe minimum requirements for proper installation and operation in order to insure adequate protection. An up-to-date American Standard Safety Code would fulfill their need.

It is the procedure of the American Standards Association that a code or standard must be reviewed for possible revision at least once every three years. In this case, however, as in so many others, the war prevented a representative group from getting together for any kind of sectional committee meeting. It was not until October 1947 that a balanced cross-section of interested members met to consider this situation.

Sponsored by the American Society of Refrigerating Engineers, and working under the guidance of the ASA, this sectional committee examined the voluminous collection of comments which have been received from all parts of the nation, and delegated several subcommittees to make specialized studies of the code. The results of their work are now made known in the revised draft which was distributed in the latter part of September.

Although many more changes may be made before the industry finally agrees on a new code, it is the intent of the committee to complete the work as soon as possible. It is hoped that whatever is adopted will become uniform throughout the country. The enforcement of one national safety code will not only insure adequate public safety but will also eliminate the added cost of producing special equipment and making special installations designed to meet the specific requirements of each individual city and state.

Pipe Flanges and Fittings, B16—

Sponsors: American Society of Mechanical Engineers; Heating, Piping and Air Conditioning Contractors National Association; Manufacturers Standardization Society of the Valve and Fittings Industry

The three joint sponsors for project B16 have submitted to the ASA, for final approval, a proposed revision of the American Standard for Cast-Iron Pipe Flanges and Flanged Fittings, Class 125 (B16a-1939). The American War Standard Pressure Ratings for Cast-Iron Pipe Flanges and Flanged Fittings, Class 125 (B16a1-1943) is proposed to be incorporated into the revised standard B16a and hence to be withdrawn as a separate document.

The revised standard will be designated as B16.1, instead of B16a, in conformity with the system of designation generally followed by the ASA. The proposed revision has been submitted to the Mechanical Standards Committee for a recommendation for approval to the Board of Review.

Mercury-Arc Rectifiers, C34—

Sponsor: American Institute of Electrical Engineers

A proposed American Standard for Pool Cathode Mercury-Arc Power Converters has been submitted by the sponsor to the ASA for approval. This standard is a revision of a report published by AIEE in June 1946 for comment and criticism. It has already been approved by the ASA sectional committee and the sponsor.

Electrical Measuring Instruments, C39—

Sponsor: Electrical Standards Committee

A letter ballot is being taken of the sectional committee regarding approval of a proposed revision of American Standard for Electrical Indicating Instruments, C39.1-1938 which was reaffirmed in 1945.

Rotating Electrical Machinery, C50—

Sponsor: Electrical Standards Committee

The chairman of this sectional committee is attempting to secure comments in order to undertake a revision of the present American Standard for Rotating Electrical Machinery, C50-1943.

Standards for Electric Lamps, C78—

Sponsor: Electrical Standards Committee

Third drafts of the Proposed American Standards for General-Service, Instant-Start, Long-Tube Hot-Cathode Multiple-Burning, and Cold-Cathode Series-Burning Fluorescent Lamps and Bactericidal Lamps were developed at a meeting of Subcommittee 2 on electric discharge lamps, August 13. It is intended that these proposed standards will be sent to letter ballot of the sectional committee.

A second draft of a proposed American Standard for Miniature Incandescent Lamps has been prepared based on committee comments on the first draft and sent to letter ballot of the sectional committee.

Office Standards, X2—

Sponsor: National Office Management Association

At a meeting on August 10, Subcommittee 5 on Business Machines decided to organize five subgroups to consider work on typewriters; accounting, adding, calculating, and punched card machines: dictating, transcribing, and communication machines: reproducing and paper-handling machines: and addressing and mailing machines.

A Classification of Business Machines Used in the Office was also adopted for use by the committee.

Letter Symbols and Abbreviations for Science and Engineering, Z10—

Sponsors: American Association for the Advancement of Science; American Institute of Electrical Engineers; American Society of Civil Engineers; American Society of Mechanical Engineers; American Society for Engineering Education

At a meeting of the sectional committee to be held in conjunction with the ASA Annual Meeting on October 12, Subcommittee 7 on standardization of letter symbols for aeronautics and aerodynamics will submit a draft standard on principal letter symbols for aeronautics and aerodynamics.

Industrial Hygiene—

At the annual meeting of the American Conference of Governmental Industrial Hygienists, held in Boston last March, a Proposed Uniform Industrial Hygiene Code and a subsidiary Proposed Uniform Industrial Hygiene Code for Dry Cleaning Operations were considered. It was agreed that copies should be circulated to other interested individuals and organizations before the ACGIH took final action.

In line with this decision, copies were sent to the American Standards Association. The Proposed Uniform Industrial Hygiene Code is being circulated by ASA to Member-Bodies and Associate Members of the Association, and to the organizations, representatives, and alternates of ASA Sectional Committees dealing with Code of Lighting Factories, Mills, and Other Work Places, A11; Safety Code for Exhaust Systems, Z9; and Allowable Concentrations of Toxic Dusts and Gases, Z37.

The Proposed Uniform Industrial Hygiene Code for Dry Cleaning Operations is being circulated to the organizations, members, and alternates of the ASA Sectional Committee on Safety Code for Dry Cleaning Operations, Z42.

ASTM Committees Being Organized

Several new technical committees are now in the process of being organized by the American Society for Testing Materials.

One, a new committee on whitewares, has recently been authorized by the Board of Directors. This committee will work in cooperation with the existing whitewares division of the American Ceramic Society. Its scope is expected to include all types of whitewares, such as sanitary ware, electrical porcelain, laboratory porcelain, stoneware, dinnerware, and ceramic tile.

To improve and develop methods for describing and evaluating the appearance properties (such as color, gloss, opacity, and texture) of engineering materials, a new technical committee on appearances is being set up. According to ASTM, so many committees of the Society are interested in various phases of the subject that there has been need for a central coordinating agency to whom all other technical committees might turn for expert advice on the subject. It is expected that the committee will meet this fall.

An interesting expansion in the field of engineering materials covered by the Society is represented in the organization of Committee C-19 on Structural Sandwich Constructions. Four subcommittees have been formed and are already at work.

Subcommittee I on Mechanical Properties of Basic Materials in its initial program will consider only those core materials not covered at present by other ASTM committees and will establish a data sheet on the properties of core as well as face materials.

Subcommittee II on Mechanical Properties of Basic Sandwich Construction has established several sections to study the various types of tests on sandwich constructions deemed advisable for consideration.

Subcommittee III on Permanence, Durability, and Simulated Service will operate at present with one section on exposure facilities and six sections on end use requirements.

Subcommittee IV on Nomenclature and Definitions has reached general agreement on a definition for "structural sandwich constructions" which, together with other definitions of terms, will be circulated for further comment.

New American Standards Available

ASA NUMBER	TITLE AND DESCRIPTION OF STANDARD	PRICE
A1.2-1948	**Sampling Hydraulic Cement, Methods of (ASTM C183-46)**	.25
A1.4-1948	**Compressive Strength of Hydraulic-Cement Mortars, Method of Test for (ASTM C109-47)**	.25
A1.11-1948	**Normal Consistency of Hydraulic Cement, Method of Test for (ASTM C187-44)**	.25
A1.12-1948	**Specific Gravity of Hydraulic Cement, Method of Test for (ASTM C188-44)**	.25
A1.13-1948	**Soundness of Hydraulic Cement Over Boiling Water (Pat Test), Method of Test for (ASTM C189-44)**	.25
	These standards, prepared by the American Society for Testing Materials, provide a series of American Standards for sampling and testing hydraulic cement.	
A37.7-1948	**Abrasion of Coarse Aggregate By Use of the Los Angeles Machine, Method of Test for (ASTM C131-47)**	.25
A37.18-1948	**Compressive Strength of Molded Concrete Cylinders, Method of Test for (ASTM C39-44)**	.25
A37.22-1948	**Flexural Strength of Concrete (Using Simple Beam With Third-Point Loading), Method of Test for (ASTM C78-44)**	.25
A37.30-1948	**Sampling Fresh Concrete, Method of (ASTM C172-44)**	.25
A37.32-1948	**Loss of Heating of Oil and Asphaltic Compounds, Method of Test for (ASTM D6-39T)**	.25
A37.58-1948	**Cement Content of Soil-Cement Mixtures, Method of Test for (ASTM D806-47)**	.25
	Recent approval by ASA of these ASTM standards brings them into the American Standard series for testing and sampling road and paving materials. (*Sponsor:* American Society for Testing Materials)	
A94.1-1948	**Interior Marble, Specifications for**	.50
	The proper methods of using and installing interior marble are specified in this new American Standard. (*Sponsor:* Marble Institute of America)	
B16.16-1948	**Cast-Iron Flanges and Flanged Fittings for Refrigerant Piping**	.45
	This standard gives dimensional and material specifications for oval, square, and round flanged fittings and screwed flanges in nominal size ranges of ¼ to ¾ in.; 1 to 4 in.; and 5 to 12 in.; respectively. (*Sponsors:* American Society of Mechanical Engineers; Heating, Piping and Air Conditioning Contractors' National Association; Manufacturers Standardization Society of the Valve and Fittings Industry)	
C39.3-1948	**Shock-Testing Mechanism for Electrical Indicating Instruments, Specifications for**	.50
	The design and construction of a shock-testing mechanism for testing electrical indicating instruments are described and specified here. By means of this standardized design, a comparative method of testing and determining resistance to shock is possible. (*Sponsor:* Electrical Standards Committee)	
C57 (18 standards approved in 1948)	**Transformers, Regulators and Reactors**	4.00
	These American Standards present standardized practices in the U. S. relating to transformers and other induction apparatus. Combined in a single reference is the information relating to the terms and conditions upon which rating and behavior of transformers and other induction apparatus are based, with special reference to the conditions upon which acceptance tests are made, and guides for testing such apparatus and for its operation in service. (*Sponsor:* Electrical Standards Committee)	